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Rapid Progress on Puget Sound Sulphite Mill

New 175-Ton Plant at Everett, Wash., Expected to Be In Operation About June 1, 1930—Five Nineteen Ton Digesters are Being Installed—Bleaching Will Be a Two-Stage System With Many New Features Which is Being Installed and Completely Supplied by the Pulp Bleaching Corp. of New York

The Puget Sound Pulp and Timber Company's new 175-ton daily capacity bleached sulphite mill now well under construction at Everett, Wash., offers another substantial step forward in the recent development on the Pacific Coast and suggests a number of marked deviations from past practices, with improvements and betterments that will undoubtedly class this plant, not only among the largest, but the latest work in the manufacture of high grade bleached sulphite.

The designers of this plant are Hardy S. Ferguson & Co., of New York, who have had long experience in the study of best mill practice, and are bending every effort to bring forth a project on the Pacific Coast that will be outstanding in the care expended on the selection of the latest and most modern equipment, together with refinements in chemical control to produce a uniform high grade pulp.

A Deviation in Pulp Mill Practice

One of the major deviations in pulp mill practice in this plant from any that have been heretofore constructed in the United States is the building of a sizeable saw mill within the layout to operate strictly as a plant utility for the purpose of breaking down both large and small logs to uniform size cants to insure a perfect control in the making of uniform chips.

With many unique features, as saw mills are classed, it will serve to cut the logs economically directly under the inspection of the pulp mill supervision, all for the purpose of, by mechanical means sawing selected wood square, free from bark, sap, dote, or knots before leaving the mill for the chipper building. The chippers are of a variety of sizes so as to permit selection of wood of the most suitable size to fill the spout of the chipper and thus insure a minimum of uneven sized chips and slivers that are usually a problem in mills where large and small pieces are all chipped in the same machine.

The Puget Sound Pulp and Timber Company, having its own timber holdings, will furnish for the plant merchantable camp run logs. The average size of the logs furnished to the plant will be 40 feet in length from 12 inches to 40 inches in diameter, from which will be cut square cants. The cants will be thoroughly selected and cleaned by means of a washing system before entering the chipper building.

Five Nineteen Ton Digesters

The chips will be conveyed on an inclined belt conveyor to be directly distributed over large chip bins above the digesters. Five 19-ton digesters are being installed in the first unit of the plant, giving ample digester capacity to cook the estimated output from fourteen to sixteen hours. The liquor will be drained off before the stock is discharged into the blow pits. For washing the stock in the blow pits, water, heated by means of coils through which the discharged liquor has passed, will be used to insure thorough first washing in the pits.

Stock is then stored in large brown stock chests having sufficient capacity to blend the total output of five digesters in a proper manner to insure uniformity. From these chests the stock is pumped to a flow box through knotters, then over dewatering devices to reduce the consistency to 10 per cent. From these dewatering devices the stock is passed through pulp separators, a special machine used for the purpose of thoroughly disintegrating the fibers. From these devices the stock passes over a complete series of specially

(*Continued on page 60*)

NEW SULPHITE MILL OF PUGET SOUND PULP & TIMBER CO., EVERETT, WASH., UNDER CONSTRUCTION

Paper Mill Activities in Fox River Valley

Consolidated Water Power & Paper Co.'s Improvement Program Almost Completed—Nekoosa-Edwards Paper Co.'s Plant Reconditioned for More Extensive Operations—Summary of Wisconsin's Paper Industry Shows Increased Business During Past Year

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., December 30, 1929.—Increased business during the last year and an outlook for good gains during 1930 are contained in a summary of activities of the paper mills of the lower Wisconsin River Valley. With its improvement program almost completed, the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis., is ready to invade new markets and make a new production record. The Nekoosa-Edwards Paper Company, of Nekoosa, Wis., likewise has its mill reconditioned for more extensive operations and looks forward to an enlarged output. The Ahdawagam Paper Products Company, Wisconsin Rapids, has made a satisfactory gain and looks forward to continued growth.

The last lap in the Consolidated's construction program is the addition of two digesters which will be ready early in 1930. The main mill then will have five digesters in operation, providing a sulphite output that will care for almost twce the previous supply. The other changes during the year include a new bleach plant, new filtration plants at Wisconsin Rapids and Biron, a new finishing and shipping room and a new garage for eleven cars of trucks. These facilities have enabled the company to change over part of the machines to ground wood book papers and to adapt production and sales to changing markets.

Although the extensive changes to buildings and machinery during the last year have hampered the Consolidated company, the amount of gross business has been increased. Forty-nine additional workers have been added to the payrolls making a total of 915 now employed in all divisions.

With this ability to turn out high grade papers of a quality exceeding anything before produced, the company expects a large increase in 1930.

Expansion during the last year at the Nekoosa-Edwards Paper Company has given the Nekoosa mill a capacity of 180 tons of kraft paper daily and the Port Edwards mill a capacity of 125 tons of sulphite wrappings, manilas, bond and glazed finished papers. The sulphite mill has been increased to 100-ton capacity, and the ground wood and bleach plants each turn out 40-tons daily. All this has served to increase the 1929 business by a large volume. The payrolls were increased by more than 100 persons, and the total force now exceeds 1,000 persons. The company looks for a greatly enlarged sales volume in 1930, according to J. E. Alexander, vice president and general manager.

Gains in business of the Ahdawagam Paper Products Company amounted to 16 per cent during the last year, according to Frank Walsh, general manager. The company makes paper boxes, mailing tubes, etc. The outlook for 1930 is still brighter, he believes, and looks for a much larger business. Production was increased by the addition of machinery costing $30,000. The payroll now contains 74 persons, an increase of eight over the previous year. Most of the paper is made by the Consolidated mill.

Dells Paper & Pulp Co. Not Selling Out

Reports emanating from Madison, Wis., which made it appear that the Dells Paper and Pulp Company, of Eau Claire, Wis., was selling out to the Northern States Power Company have been found to be without foundation. An explanation made by C. T. Bundy, attorney for the paper company, reveals the source of the rumors. The paper company and power company have been attempting for a long time to reach an agreement over power rights in the Chippewa River in order to overcome a situation which might cause the mill to close down for ten hours each day. The power company used water power fourteen hours a day from a series of dams along the river, and wanted to hold the water back for the remaining ten hours. A tentative agreement was reached between the two companies so the Dells company was served with electric power during the time the winter power was down. The threat of shutdowns still hung, however, and the solution finally reached was the sale of stock of the Dells Improvement Company to the power company, the terms of sale including a contract by which the paper company gets cheap night current for wood grinding under an arrangement for an indefinite period, no matter how much water is supplied from the Chippewa River. The improvement company holds a 99-year lease with the city of Eau Claire covering water power rights of the Dells dam.

Northern Paper Mills Conference

Sales representatives of the Northern Paper Mills, Green Bay, Wis., held their annual conference at the home office ten days ago. Thirty-three were present and all sections of the country were represented except California. Judson G. Rosebush, vice president and general manager, was the principal speaker and reviewed the year's business. He declared that 1929 was the best year in the company's history. The manufacture and purposes of several new by-products were explained so the salesmen will understand them fully when placed on the market. The convention closed with a banquet at the Beaumont Hotel, with 110 persons attending. Other speakers included W. P. Wagner, president of the company, and Glenn Sample, president of Blackett, Sample, Hummert & Co., Chicago. The latter explained the advertising campaigns laid out for the year 1930 for the Northern's products.

Atlas Mill Closed Down

With the partial transfer of operations to the newly acquired Lakeview mill, the Kimberly-Clark Corporation, Neenah, Wis., has closed down one of the oldest mills in the Fox River Valley, the Atlas mill at Appleton, Wis. The shutdown included all departments except the converting division, which continues to function as usual.

The Lake view mill, formerly owned by Sears, Roebuck & Co., was enlarged to almost double its former size and a large amount of equipment was installed, principally for the manufacture of specialties. These previously made at the Atlas mill were wall paper, cover paper and other specialties. This mill had been operating two 82-inch Fourdriniers, with a capacity of 30 tons daily.

Some of the oldest employes of the company were employed at the Atlas mill and have been retired on a pension. Others were transferred to the Lakeview mill. No plans have been made as to the future of the Atlas mill, according to F. J. Sensenbrenner, president.

Industrial Conference Scheduled

Owners or executives of almost every paper mill in Wisconsin will attend a conference at the court house at Appleton, Wis., on Jan. 10, called by the Wisconsin Industrial Commission. The purpose will be to discuss again the Wisconsin law which requires employes in all industries to have one full day of rest out of each seven.

Modifications were made following a conference a year ago so that paper mills could employ workers for not more than three hours on Sundays for necessary repairs, and did not include superintendents under the law because their work is supervisory anyway.

It develops now that some paper mills have not found it possible

or practicable to enforce the law since that time. The session is called, therefore, so those who have effected the changes can explain how the law is put into operation, and those not now using the rest schedule can present their reasons why, or cite the peculiar conditions which might prevent the plan. The industrial commission uses the conference method with good success rather than arbitrary enforcement and punitive measures where injustices might be worked.

Institute of Paper Chemistry Plans

Lawrence College, Appleton, Wis., will start its Institute of Paper Chemistry when the second semester opens, according to plans just announced. Only canditates who have a degree of B. A. or B. S. and who have majored in science will be admitted. Men who enter must show superior ability.

These restrictions are placed on the school so that it will accomplish a high type of service to the paper industry, not only in the training of graduate students, but in the research work which will come of the same source!

When it was known that D. Otto Kress, internationally known paper expert, was to head the institute, several additional appropriations were made by paper mills in addition to $300,000 already donated for instruction and research, and $15,500 for the paper library. Ernest Mahler, vice president and general superintendent of the Kimberly-Clark Corporation, Neenah, Wis., is chairman of the board of trustees.

Paper Board Industry Active

Milwaukee, Wis., has enjoyed unusually favorable conditions in the fiber and paper board industry during the last year, according to George E. McKowen,. secretary of the Hummel & Downing Company, of that city, one of the large carton plants of the state. There are predictions also of a healthier and broader mercantile activity for 1930.

The industry, it was stated by Mr. McKowen, is gradually working itself out of an over production state by intensive sales and business created by the growing demands for containers in new lines. "Our mills and factory are working full time, with commitments extending well into the new year, virtually assuring us little idle time," he said.

Safety School Certificates Awarded

Large numbers of employes of paper mills of Neenah and Menasha, Wis., were awarded certificates at the closing session last week of the Twin City safety school conducted weekly at Menasha. The Gilbert Paper Company led the list, with 57 employes completing the sessions. Marathon Paper Company's carton division was second with 35; Kimberly-Clark Corporation 29; Menasha Wooden Ware Corporation 18; Wisconsin Tissue Mills 10; George A. Whiting Paper Company 5; George Banta Publishing Company 9, and smaller numbers from the Bergstrom Paper Company, John Strange Paper Company, and Menasha Paper Mills.

The safety school conducted at Wisconsin Rapids, Wis., also closed last week with a banquet attended by nearly 300 who were eligible for certificates. Many of these were employes of the Consolidated Water Power and Paper Company, of that city. The speaker of the evening was Harold Marton Kramer, author, whose subject was "What of Tomorrow?" Certificates were given out as a reward for faithful attendance at the weekly evening sessions.

Frank Hoberg Will Probated

An estate of $75,000 plus real estate valued at $10,000 was left by the late Frank Hoberg, founder of the Hoberg Paper and Fibre Company, Green Bay, Wis., according to his will as filed in probate court. His widow receives the bulk of the estate and the remainder is divided among his son, Leroy, and his daughter, Mrs. Helen Moeller.

Timber Cutting More Extensive

Timber cutting in northern Michigan, where much of the pulp wood supply now is obtained, will be about twenty per cent more extensive than last year, according to present estimates.

The Peninsula division of the Chicago and Northwestern Railway is preparing to handle 37,000 car-loads this winter. The daily delivery of pulp wood will be about 200 cars. Logging trains will be run continually to keep the timber moving to the manufacturing centers.

G. W. Mead Will Again Run for Mayor

George W. Mead, president of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., will again be a candidate for mayor of his home city. It was reported previously that petitions were being circulated, and he announced his acceptance of the candidacy because of the fact that the demand for his services was practically unanimous. Many public improvements have been made during the four years he has served, and city affairs have been placed on a sound and efficient basis. The labor unions were instrumental in placing him in office.

Col. F. J. Schneller Addresses Noon Club

Col. Frank J. Schneller vice president of the Gilbert Paper Company, gave an educational address at a meeting last week of the Wednesday Noon Club, of Oshkosh, Wis. He told how paper is manufactured, and pointed to the fact that Wisconsin makes the equivalent of 300,000,000 letterheads a week. The speaker advocated the use of the best paper for business purposes.

News of the Industry

Two hundred attended a banquet and dance last week, given by the Victory Welfare Association for employees of the Victory Bag and Paper Company, of Marinette, Wis. This is an annual event for the entertainment of the workers in the mill. W. W. Hinnenthal, general manager, gave an address in which he praised the work of the mill organization during the last year and urged them to keep up the high quality of Victory bags. He said the year ahead looked very promising.

Increased bonuses were given out this year to employees of the Bergstrom Paper Company, Neenah, Wis. This custom has been observed annually but because the company was celebrating its twenty-fifth anniversary, the amount of the checks was made larger. The concern was founded in October, 1904.

Offices of the Multi-Print Company, which have been located at Neenah, Wis., have been moved to New York City. The change was made to facilitate export service. John Kimberly and his son, Knox Kimberly, who have conducted the business, will remain at Neenah, and have engaged a manager to look after the New York office.

The Gilbert Paper Company, Neenah, Wis., has been made defendant in a compensation claim filed with the Wisconsin Industrial Commission by Phillip N. Jacobs, an employee. He claims he suffered hernia from over-lifting. Arguments in the case were heard last week.

Isaac P. Witter, of Wisconsin Rapids, Wis., formerly with the Consolidated Water Power and Paper Company, made his annual gift at Christmas time to the Scott Library and the J. D. Witter Traveling Library, of his home city. The former received $4,000 for maintenance, and the latter $1,000.

Orville L. Parmenter, 83, died last week at Racine, Wis. He was the president of the Racine Paper Products Company, and inventor of the paper pocket for cigars.

Maine Seaboard Paper Co. Orders Fourdriniers

WORCESTER, Mass., December 31, 1929.—A million dollar order for machinery to equip the new mill of the Maine Seaboard Paper Company, at Bucksport, Me., has been placed with the Rice, Barton and Fales Company of this city, officials of the concern announced last week. The contract is one of the largest ever awarded to a Worcester manufacturing plant, it was declared.

The Bucksport plant will be the largest of its kind erected in New England in 20 years. The two machines to be manufactured by the Worcester company will be of the latest design. Each will weigh 2,500,000 pounds and will be capable of producing a sheet of paper 18 feet wide at a speed of 1,500 feet per minute.

Demand for Paper Seasonal in Philadelphia

Heavy Last Minute Rush for Practically All Standard Grades of Paper Experienced by Quaker City Paper Merchants—Orders On Hand In Pennsylvania Paper Mills Will Hold Production For Next Few Weeks—Book Paper Manufacturers Active

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., December 30, 1929.—Chiefly concerned with the inventory of stocks on hand and the accounting of the closing business cycle for 1929 the Quaker City trade is now in that period of recess from market activity normally effective at this season. The holiday week was much brighter for the wrapping paper division as the belated paper requirements of merchants and manufacturers kept shipping departments at humming speed meeting the needs for rush orders that supplanted more sober consideration of paper demands of the earlier December days. Back of this last minute rush for paper of all descriptions was a gratifying account of the trading of the week which brought business above the Christmas week of 1928. In total sales of paper the Christmas requirements of this year were far in excess of the same season of last year and the total December sales slightly above those of last year. To those merchants having supplies on hand of larger hold over stocks this belated buying of the Christmas week was most pleasing as it gave opportunity for clearing out warehouses before the inventory period, prevents the usual offerings under market prices and assures a steady early 1930 paper business. It was opportune that the Yuletide rush gave the dealers this effective means for clearing out large stocks of wrapping papers, specialities in packing containers, and many other grades of converted papers that were laggards throughout the late 1929 and which for a time appeared to hang over into the new year.

Though prices of kraft were advanced in November, the late December week brought a further adjustment of prices to lower levels, as mills announced a cut in the cost of this class of paper that will enable the dealers to discount their cash purchase and to open the 1930 season with stocks more on a parity with the values that prevailed in 1929. While there has been no drastic cut in the price of the papers from the mills that announced the adjustment of prices it is more in keeping with needs of the dealers who have been cleared of the 1929 manufacture in kraft in the holiday week and who can now meet the competition of the kraft markets that prevailed before the November rise which was effective in the larger mills as of November 21 generally and at which time the usual cash discount was eliminated. This cash discount elimination was a matter of deep concern to the trade which in a body protested to the National association against the new practice. Now that certain large mills have adjusted prices so that a compromise has been made in the lowering of prices to meet the usual discount terms satisfactorily it is believed that other mills will follow suit. This week saw the adjustment of "terms" effective the first of the year in a reduction of the prices of kraft of high quality to a recession of 10 cents per 100 pounds as a lowest estimate and in some cases of 15 cents where quantity is at stake in the orders. Both rolls and sheet kraft have been given the 10 to 15 cents cut. This adjustment is f.o.b. mills, less freight to destination, and meets the dealers needs in holstering values for the New Year so that their inventories will not carry the burden of costly materials against the paper market.

While the wrapping paper dealers were enjoying a widely distributed and diversified demand, there was a drifting business in the fine paper group. Wholesale merchants report fairly good contract demand for the early weeks of 1930 but present day purchases were of the small lot type to hold over the year end demands of the consumers. Manufacturing stationers are more frequent buyers of bookkeeping supplies and paper used in the forms of large corporations for accounting or order purposes, but fancy papers were less active. Wholesalers began the New Year with good orders for unfinished book papers and a livelier demand for coated grades needed for direct mail advertising. News print moved slowly but held firm. Prices on all grades of fine paper are firmer than they were at the opening of 1929 and indicate the stability that has held for the past six months.

New year requirements of the manufacturers are fair but indicate little preparation for a long period ahead. Present orders on hand in the local paper mills are of proportions that will hold production for a few weeks of the new year. The manufacturers of book papers are the most active. Board mills are not booked with extensive orders but are campaigning strenuously for tonnage to maintain operations for the early year. Glassine manufacturers report slowing down of operation and orders for the next fortnight only.

Paper Trade Association Meets

Nomination of a committee to name the officials who will be elected at the January session of the Philadelphia Paper Trade Association occupied the members at the quarterly meeting held last Friday at the Benjamin Franklin Hotel. Those who were appointed by President Simon Walter to the Nomination Committee were: E. Walter, Wilcox, Walter Furlong Company; Charles Wilder, Wilder Brothers; N. A. Considine, Paper House of Pennsylvania; and E. A. Keller, Garrett Buchanan Company. These will report their choice of officers at the meeting next month for election to be held on January 17. Following the appointment of the Nomination Committee there was the reading of the usual reports of the officers with President Walter, Vice President W. S. Wilcox, Treasurer A. Richard Hartung, Secretary N. A. Considine, and Corresponding Secretary G. E. Barnes, giving statements of the activities of the last quarter of the fiscal year for 1929. The group enjoyed the Christmas luncheon following the busines session.

Garrett-Buchanan Co. on the Air

Broadcasting of the Christmas entertainment held annually by the business family of the Garrett-Buchanan Company, 16-20 South 6th street, this year gave the firm prominence on the Yule. Eve in an hour's program over the net work of the Columbia broadcasting system through the local station WCAU. From one o'clock to two in the afternoon of Christmas Eve, the Garrett-Buchanan Company broadcasted its program of Christmas Carols with the entire forces joining in the choral numbers led by the Garrett-Buchanan Company quartet. During the broadcasting President Morgan H. Thomas, of the firm, greeted his air audience with a message of Christmas cheer and over the "Mike" invited the public to visit the headquarters of the firm in this city, and its subsidiary, the Van Reed Paper Company, of Reading Pa., which it took over a few months ago. The entire staff of the Van Reed Paper Company journeyed to Philadelphia and were the guests of the local staff at the Christmas celebration. The visitors from the Reading paper house were C. Raymond Van Reed, C. R. Smith and Isaac J. Zinn, its official staff.

A. Clarence Holland Retires

Owing to an affliction of the eyes, A. Clarence Holland, more than fifty years associated with the Philadelphia paper industry and long linked with its pioneer paper concerns, has been obliged to retire from active work and his long association with the S. S. Garrett Company, 259 South 3rd street. Mr. Holland has been suffering from cataract on the eyes and upon advise of his physician has given up work. He began his paper trade career

in 1876 with the pioneer paper firm founded by Sylvester Garrett, father of Sylvester S. Garrett with whom he was employed for the past fifteen years, until his retirement last week. He is widely known in paper circles and in fraternal organizations, having been for several years Grand Exalted Sachem of the Red Men's Lodges.

Paper and Cordage Association Elects Officers

Combining a Yuletide feast with the business of election of officers, the members of the Paper and Cordage Association met last Friday at the Adelphia Hotel and around the festive board enjoyed one of the most delightful sessions ever staged by that group. There were 28 associates of the trade present and immediately following the election of officers the gathering became a colorful and gala occasion. In a setting of Yuletide colorfulness there was enjoyed the program of singing and other entertainment and the distribution of gifts among the members while favors indicative of Christmas tide were distributed. Joseph Waldman Jr., of the Edwin H. Fitler Company, led the festivities and accompanied the choral singing at the piano while the members extended greetings, and President George K. Hooper, of the organization, and member of the Hooper Paper and Twine Company extended the season's compliments and then congratulated his fellows on the election of so efficient and representative group of trade associates. These were elected to office for the coming year;—President Hooper, re-elected; Vice President Frederick I. Brower, Groveton Paper Company; Treasurer Stanley G. Brower, J. L. N. Smythe Company; and Secretary William Edkins, Morice Jute Mills. E. L. Richards, retiring chairman of the entertainment committee, supplied the day's entertainment and gave a gala and diversified program as his farewell. John G. Birle, American Forest Products Company, who was appointed his successor as chairman of the entertainment committee, is planning a dance and social occasion sometime in March and has arranged for other social functions to be held at intervals in conjunction with the monthly gatherings of the members. E. L. Richards will devote his entire time to the Credit Bureau and is planning a meeting in the coming month of all the credit managers of the various firms enrolled in the association to provide for more thorough function of the Bureau and to sponsor co-operative exchange of credit information for the benefit of the membership. This phase of the activities of the organization will be made an outstanding one in the coming year and there is to be arranged the gathering of credit managers at the January luncheon along the lines of closer united efforts on credits. At the meeting the members arranged to send a floral tribute to Charles Bartlett, of the Eastern Paper Company, who is in the hospital ill.

Auto-Self Opening Cellophane Face Bags

Having been engaged in the manufacture of the cellophane face square bags for the past year with great success and with broadly distributed products in these, as well as the Display Bags, Thomas M. Royal Co. is now forging ahead in the same big way with its latest contribution to the lines in the way of automatic self opening style of bags. The mammoth factory at 7th and Grange streets which the Royal Company has established as one of the largest of bag producing plants in the East, is equipped to manufacture the cellophane face and the display bags in the automatic bags, this phase of the production of the converted products having been recently adopted to augment the square styles which have been made for the past year or more. The automatic self opening bags will be manufactured in all sizes. The new products in the cellophane face bags which the firm patented are made in all grades of papers combined with cellophane fronts and have been so widely distributed that production has been kept at the pinnacle for the entire year.

Robertson Paper Co. Perfects New Waxed Rolls

An entirely new idea in the form of manufacture of waxed paper rolls so that the cutting is readily accomplished to meet the needs for the consumers of this class of trade product, has been adopted by the Robertson Paper Company, Inc., of Bellows Falls, Vt., and is now being distributed in the new lunch rolls stocked for the late year by the Philadelphia wrapping paper and specialty dealers. The new lunch roll is packed in the regular boxings which have been so designed as to permit of cutting on the edge of the box from the roll within in any size which the customer desires. It is being featured as the new 1930 offering of the Robertson Paper Company, Inc. by the local representative, William T. Pease, who recently became Philadelphia representative of the manufacturers covering this territory for its lines of waxed papers and allied products, with headquarters at 3754 North 18th street.

W. C. Hamilton & Sons New Lines

After a lively Fall and early winter, the mills of W. C. Hamilton Sons, Miquon, are preparing for the new lines of papers which will be brought out in the coming year. The mills have been kept at full schedule throughout the last quarter of the year and the new pasting machine which was installed in the mid year has been kept running continuously on the manufacture of two three and four ply products which heretofore were produced under outside contract. With the introduction of the firm's own pasting machine speedier service to the trade has been facilitated and this branch of the business vastly increased. Joseph H. Dunton, sales manager for the Hamilton company, has just returned from a tour of the New England trade where the distribution of the Hamilton writings, bond, and bristols, and other papers, have been broadening throughout recent months.

New Imported Papers for Japan Paper Co.

New importations from mills in Europe in writing papers adapted for use by the stationery, printing and papeterie manufacturing trades, are included among the offerings for 1930 which the Japan Paper Company will feature after the first of the new year. The new lines include Italian, French, Swedish, and German papers. They are to be offered in bulk quantities in the papeteries ready for sales to the stationery trades or for gift and art shops. These lines were purchased by J. L. Rahm stationery manager of the Japan Company, with headquarters in New York, on his late Fall trip to Europe, from which he returned this month. The complete assortment of European offerings will be on display in the Philadelphia offices in the Witherspoon Building next month, where Manager Warwick C. Miller will particularly feature these latest creations of the foreign paper manufacturers.

Sales Club to Include Paper Trade Representatives

Representatives of the paper trade who are interested in developing into better printing trade salesmen are invited to enroll in the classes which will be promoted by the Philadelphia Typothetae for the members of the Sales Club of that organization, after the New Year. The series of sales talks will be given by experts identified with the printing industries and will be open to those who enroll in the classes of the Sales Club. These instructive courses will be open to the members of the paper trade who cater to the printing industries. The paper trade division of the Sales Club has been under the direction of Leonard Peck, of the Paper House of Pennsylvania, who has been active in promoting an interest among the paper trade salesmen who desire to better themselves in the knowledge of the needs of the printing and allied industries so as to become perfected in sales promotion work for their firms. The first of the series will be held in January. N. A. Considine, of the Paper House of Pennsylvania, has also been a leader in this informative work among the paper houses as a representative of the Paper Committee of the Typothetae.

Carter, Rice & Co. To Occupy New Building

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., December 28, 1929.—The local branch of Carter, Rice & Co. will soon be housed in a new concrete building which is being erected at 16th and Johnson streets on a site 100x100 feet.

News Print Price Situation Little Changed

Announcement of International Paper Co.'s Decision to Retain Prevailing Quotation During First Half of Next Year Leaves Some Element of Doubt In Future Outlook—Canadian Manufacturers Placed In Awkward Position by Developments

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., December 30, 1929.—Just how much or how little is behind the announcement of the International Paper Company in regard to the price of news print nobody here seems to know. The first feeling was one of disappointment that the company had decided on making no change in the price for the first half of 1930. A later view is that the announcement is not so unfavorable as would appear at first glance, and that while the policy leaves an element of doubt in the outlook for the industry, there is every reason to believe that the International will fall in line with the Canadian producers at the middle of the year unless marketing conditions are adversely affected in the meantime.

However, there is no blinking the fact that the Canadian operators have been put into an awkward position. The three big companies which have announced an advance of $5 per ton are Canada Power and Paper, Abitibi Power and Paper and Price Brothers, these three companies representing over 50 per cent of Canada's output. Their new price, it is true, only goes into effect on supplies for which there is no three-year contract, while on three-year contracts the increase will be delayed for six months. Obviously they will meet with some difficulty in signing up new contracts while a big producer like the International stands by the old price. Then again it is difficult to see how one of the objects of the recent negotiations, namely an equitable distribution of orders among existing mills, can be fully achieved with two prices prevailing.

What action, if any, the Provincial Governments of Ontario and Quebec may be contemplating is not known, but there are indications that further conferences may take place, and that if the situation does not improve the two governments will be forced by public opinion to implement their promises of drastic regulations.

Mersey Paper Financing

It is expected that financing in connection with the Mersey Paper Company will shortly be undertaken by the Royal Securities Corporation of Montreal, and public issues of stock are anticipated early in the New Year. The company is now turning out 50 tons of news print per day for the mill which was officially opened at Liverpool, N. S., on December 14. The first run was for the *New York Herald-Tribune*, and all the output for 1930 has been contracted for, most of it going to New York and only a small proportion being marketed in the Maritimes.

Paper Trade Prospects in Mexico

C. Noel Wilde, Canadian Trade Commissioner in Mexico City, writes that in 1928 the value of paper pulp imports into Mexico was $582,695 as against $478,520 in 1925. There are some half-dozen paper mills in Mexico, one of which operates on a large scale. As the duties on paper products are high, the business should continue to increase. Mechanical wood pulp is produced locally, but chemical pulps are imported, the principal sources of supply being Norway, Sweden, and Czechoslovakia. Canadian pulp has been imported in the past, and the quality is stated to be entirely satisfactory; the trade only ceased when prices became non-competitive some three years ago. This situation now appears to be changing, and it is probable that Canada will again be able to enter the market in the near future. Present prices are $44.50 bleached and $32.00 easy bleaching sulphite pulp, delivered c.i.f. Mexican ports.

Meanwhile the Canadian Government announces that a new customs tariff of Mexico has now been issued and will become effective on January 1, 1930. Simultaneously with the introduction of the new tariff, a change will be made in the method of documentation required in connection with shipments to Mexico. This change involves the cancellation of the 10 per cent consular fee payable by the shippers, and also the disuse of consular invoices. The change also involves the cancellation of the surcharge of 10 per cent on all duties which have hitherto been paid at the port of entry. A further surcharge of 3 per cent, which has hitherto been made at the port of entry in the same manner, will not be cancelled. The rates of duty in the new tariff have been, in general, increased to an extent designed to compensate for the loss of the 10 per cent consular fee and the 10 per cent surcharge mentioned above; but the total amount payable on imports, inclusive of all charges, is intended to remain approximately as before.

Outlook for Paper Trade Bright In Boston

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., December 30, 1929.—The general situation in the paper market here is favorable, considering the time of year, with inventory taking under way and buyers placing as few orders as possible. Some houses are receiving gratifying orders. The head of one of the fine paper houses says that business has been fairly good during December and that the outlook is also fairly good for the coming year. The same man felt that the stock market episode would affect business a great deal, but his firm has had "several nice orders" this month. Certain specialties and other essentials have apparently been unaffected to any appreciable extent. Some rush orders have come in. One portion of the business, however, has been affected. There have not been so many large catalog runs as before the stock market crash. The demand for kraft has been comparatively quiet.

A seasonal quiet exists in the box board market, but the prospects are that there will be more activity by the middle of January. Mills were closed Christmas week. Box-makers are said to be carrying only about 50 per cent of their usual amount of stock. It is estimated that the consumption of box board during the year has been as large as any. A dealer notes that his firm has been doing a hand-to-mouth business, but the aggregate has been more than that of 1928. What now seems to be perennial predictions and expectations in regard to the price situation have not been realized. Quoted values for board include $35 for chip and $37.50 for filled news. Special or small orders are filled at higher rates, although the same prices as for larger quantities have previously prevailed.

General conditions in paper stock are better, although there appears to be more activity in some quarters than in others. Buyers seem more disposed to consider various commodities in this market at present prices and are making contracts for 1930. Foreign book stock is in fair demand at 1.65 per cwt. delivered at mill, this price being offered by large consumers. Mixed papers are lower, quotable at $7 per ton, f.o.b. Boston. The old kraft market is weak. Old gunny bagging is quotable at 1½ cents f.o.b. Boston and scrap burlap at about the same price. Foreign manila rope is worth 4.40 ex-dock. New rags are holding at practically the same levels. The fine writing mills are ready to buy suitable quantities at present market prices for future delivery. The roofing rag trade is "in statu quo,"

Unique Howard Smith Innovation

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., December 30, 1929.—There was recently on exhibition in the Toronto offices of the Howard Smith Paper Mills, Ltd., a revolutionary method of sampling cover and text papers for the convenience of printers, or other consumers of paper, in the form of a sample cabinet, which was originated by the advertising department of the company. It brings together a dozen sheets, 17x11 inches, in folded form of each color and weight of each paper closely related as to its use, into a leather board accordeon container. A plain white offset paper would consist of six of these half-quire packages, one for each weight. There is a high label, upon which is printed the name of the paper and its different weights. Inside each bunch of paper is a printed postcard for the printer to mail in to the company if he desires more information or more sample sheets. There are about twenty-five of these containers of samples in the lines represented, which are covers, deckel-edge papers, offset papers and a few book papers. The idea is to make a complete case of papers suitable for booklets, brochures, broadsides, and folders, with covers suitable to each variety of printed matter. All of the containers have index numbers and there is an index sheet giving with the number of each container the kind of paper, and of cover stock, contained in the envelope of that number in order that the printer may at once turn to exactly what he wants. The idea is not only to furnish the printer samples of the papers and covers, but enough of each variety to enable him to make up dummies up to 24 pages, 5½x8½ inches, or 48 pages 4¼x5½ inches, which should prove a boon to the printer. On the face of the container there is pasted a label giving the names and telephone numbers of dealers throughout Canada who carry the paper in stock. These containers are assembled in a substantial steel case and drawer, the latter easy running and holding the containers securely as well as yielding them willingly. This assembly of related samples into such a convenient form, and delivering them in a handsome and durable piece of office furnishing is something of an innovation which Canadian printers will no doubt welcome. It is an important item of service by the Howard Smith organization.

News of the Boston Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., December 30, 1929.—The staff of Carter, Rice & Co. Corp., enjoyed a Christmas party at the office of the company Tuesday, December 24, with 100 present. Santa Claus, impersonated by George Burns, a salesman, distributed gifts embodying humorous hits on the recipients. The program included a radio entertainment in which a German professor, impersonated by Edward Bement, director, demonstrated a new radio set, made in burlesque fashion, with the broadcasting done by individuals concealed in the rear of the apparatus. Miss Gertrude Killoran rendered vocal selections, accompanied by Miss Mildred Gavin, pianist. Among those present were Hubert L. Carter, president, and C. A. Esty, managing director. The New Year's Greetings which Carter, Rice & Co. Corp. are sending are printed on Strathmore Cockatoo and are enclosed in one of the new Strathmore envelopes, made by the Old Colony Envelope Company.

The Martin Cantine Company, manufacturers of coated papers at Saugerties, N. Y., now has a limited number of distributors in Boston, no longer considered as open territory. Paper will be shipped to Boston and suburbs only for Rutter & McNaught, Inc., Cook-Vivian Company, Carter, Rice & Co. Corp., and Arthur E. Ham & Sons, the plan becoming effective January 1.

The New England friends of William G. Shortess, president of the Federal Paper Board Company, Inc., Bogota, N. J., who underwent an operation in a New York hospital in November, will be glad to hear that he is doing well and is expected to leave the hospital shortly after the first of the year.

F. Bendel Tracy, head of the Fort Hill Paper Company, and secretary of the Boston Paper Trade Association, was married to Miss Marion E. Stupp at Bronxville, N. Y., December 14. After a wedding trip Mr. and Mrs. Tracy came to Boston on Friday. They will live at Longwood Towers after January 1.

The Wing Wall Paper Company has been incorporated at Worcester, Mass., with a capitalization of $90,000; 3,000 shares, $30 each. President, Walter S. Wing; Treasurer, Michael Goldblatt, Brookline, Mass., and Albert Lappin.

Paper Mill Workers Awards for Injuries

[FROM OUR REGULAR CORRESPONDENT]

LOWVILLE, N. Y., December 28, 1929.—At a hearing in Compensation Court before Justice Richardson an award of $1,400 was granted Harry E. Eggleston, an employee of Knowlton Brothers, who was injured recently. He sustained severe injuries to his arm while in the employ of the company which resulted in loss of the use of the injured member. Two serious facial disfigurement awards were made in the cases of James A. Parker and Douglas B. Manchester. The $150 award granted Parker was tentative depending upon whether the insurance carrier will ask a hearing. He was injured while installing beaters in the plant of the Hinde and Dauch Paper Company.

The second highest award went to Edward Ladouceur, who was injured while working for the Raxquette River Paper Company, the amount being fixed at $1,303.69. It was claimed that the injuries resulted in loss, in the use of his left hand. Andrew Humkins, of Pyrites, employed by the International Paper Company, was awarded $768.14 for injuries to his left arm while in the employ of that firm. An award of $732 was granted Wilbur Barney, who was injured while working at the Norwood plant of the Martin Pulp and Paper Company. Gene Ferguson received $138 to conpensate him for the loss of his right index finger while employed at the Norwood plant of the St. Regis Paper Company.

Oregon Mills Vote Dividends

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., December 28, 1929.—The St. Helens Pulp and Paper Company, St. Helens, Ore., voted a two per cent extra dividend as a Christmas present to their stockholders at the same time that they declared the regular quarterly disbursements of two per cent payable in January to stockholders of record January 5. The dividend ratio established by the declaration of the Christmas payment places the stock on a 10 per cent basis as it has paid regular quarterly dividends of two per cent.

The payment of this extra dividend indicates a strong cash condition of the company as according to terms of the bond issue it is required that the company have a surplus of $500,000 before dividends may be paid on the common stock. No preferred stock has been sold.

Although no estimate of earnings is available at this time it is understood that business has been brisk. Orders mantained during the past month have maintained the rate established prior to the break in the stock market.

Directors of the Hawley Pulp and Paper Company also voted the regular dividend of $1.75 on the first preferred payable to stock of record December 20. Earnings of the company, according to Blythe & Co., which took over the management July 1, have been satisfactory. Dividends which were passed several months ago have been paid to date.

Invents New Cylinder Mould

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., December 31, 1929.—Alvan S. Clark of this city has invented a new high speed cylinder mould containing no longitudinal rods or winding wire which it is claimed will run 50 feet a minute faster than the ordinary cylinder mould. One of them has been in operation on a 94 inch machine at the North End Paper Company of Fulton N. Y., for the past two years.

Obituary

Warren M. Behrend

To save the lives of children in a school bus that turned suddenly in front of him on the afternoon of December 19, Warren M. Behrend, only son of E. R. Behrend, president of Hammermill Paper Company, deliberately swung his car off the highway near Pleasant Hill, N. C., and was instantly killed. A school mate, Ned Richardson, received injuries from which he recovered. Warren Behrend, who was in his twentieth year, was driving from Washington to Charleston to join his parents and other relatives for the Christmas holidays.

From the evidence of witnesses and state troopers, it is clear that young Mr. Behrend, after stopping at a gasoline station, was getting under way, driving carefully, when a school bus full of children coming from the opposite direction, turned suddenly in front of him to enter a side road. Veering quickly to avoid striking the bus and injuring the children, the Behrend car swung out on the soft shoulder of the road and turned over.

Impressive burial services were conducted on Sunday, December 22, in the Chapel of the Resurrection in the National Episcopal Cathedral in Washington, D. C., by Bishop John C. Ward of the diocese of Erie. Coincidental services, held in the Cathedral of St. Paul at Erie, Pennsylvania, were attended by hundreds of the personal friends of the family who took this opportunity to express their affection and sorrow.

After the Washington services, the body was placed in the community mausoleum adjacent to the National Cemetery. The decision as to a permanent resting place will be made later by the family.

John K. Judd

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., December 31, 1929.—John K. Judd, 79, founder of the paper jobbing and specialty house of the Judd Paper Company, died last week at his home after a long illness. He retired from busines about five years ago on account of failing health. He came to Holyoke in 1875 and formed a partnership with James Hatch and Harry Fairfield for a time and later joined the Powers Paper Company of Springfield. In 1878 he returned to Holyoke and joined the Worthington Paper Company leaving that company to establish the Judd Paper Company which was incorporated in 1890 with Mr. Judd as president. When he retired his two sons, Phillip M. and Clifford K. Judd, took active charge of the concern which has been managed by them successfully ever since.

He had been deacon of the First Congregational Church for 25 years, member of the Connecticut Valley Congregational Club, Holyoke Canoe Club, Mount Tom Golf Club, director of the Holyoke Hospital and one of the trustees of the People's Savings Bank. Besides his sons mentioned, he leaves his widow, and one daughter, Mrs. Cleora Marion Graves, of Springfield, and one sister, Mrs. Eliza J. Church, of Indianapolis. The funeral was held Thursday with burial in the Forestdale Cemetery.

John J. Boyle

BOSTON, Mass., December 30, 1929.—John Joseph Boyle, 81, for 67 years with Storrs & Bement Company, sixty of which were as salesman, died Wednesday. Mr. Boyle had been ill since December 1. He was born in Boston, July 4, 1848. He attended school in this city, completing the fifth grade at the age of thirteen. He then attempted to enlist in the Union Army, but was not accepted on account of his size. Amariah Storrs, of A. Storrs & Bement, engaged him as errand boy in a paper store on Cornhill. He went with the firm successively to their locations on Devonshire street, Broomfield street, Franklin street, Federal street, and last to their present establishment on Congress street. He rose to higher positions and in 1869 became salesman. Within the last year he was still calling on some of the accounts he secured sixty years ago.

Mr. Boyle was well and favorably known to the trade throughout New England, where he sold news print to the newspapers, enamel coated paprs to magazine publishers and fine book papers to a number of the old-line publishing houses. His lines included Old Hampshire Bond and Hammermill Bond. He sold paper also to about all the box makers in New England. For many years he traveled fifty miles a day, 300 days in the year and last summer estimated that he had aggregated approximately 1,000,000 miles. Of late his calls were principally on his Boston friends, to whom he sold paper.

In an interview last summer Mr. Boyle recounted some of his experiences, remarking, "I am proud to say that in all my sixty years as a salesman, I've never lied to a customer, neither have I ever been late to keep an appointment"

Mr. Boyle made his home at 64 Hartford street, Dorchester, with his son, John J. Boyle, Jr., a Boston broker.

Charles W. Jenks

BEDFORD, Mass., December 26, 1929.—Charles William Jenks, for twenty years Town Moderator, died at his home last night. He was born in Boston in 1848, the son of John Henry and Mary Rand Jenks. Stonecroft Farm in Bedford, Mr. Jenks's home, was the home of his great-grandfather in Revolutionary times, and has remained in the family.

After graduating at Harvard in 1871, he went into the paper business in the Groton mills of L. Hollingsworth & Co. For ten years he was a paper manufacturer. Then he went into the Boston offices of his firm, but retired to Bedford to live in 1884.

In 1927 he donated a site for the new Junior High School of Bedford and a tract of sixteen acres to be devoted to municipal uses, including an extension of several acres to Shawsheen Cemetery and a large addition to the lands of the municipal water department.

George Turnbull

TORONTO, Ont., December 30, 1929.—The death took place in Galt a few days ago of George Turnbull, of the Galt Paper Box Company, well known in paper box circles generally throughout Ontario. Deceased was 65 years of age and had been engaged in the paper box manufacturing business in Galt, Brantford and Woodstock. He was prominent in municipal affairs in Galt. He was unmarried and leaves two sisters.

Connecticut Valley Superintendents Meet

At a meeting of the Connecticut Valley Division of the American Pulp and Paper Mill Superintendents Association, the following officers were elected to serve the coming year.

Chairman, Matthew V. Horgan, Holyoke, Mass.; First Vice Chairman, Lewis E. Weiser, New Haven, Conn.; Second Vice Chairman, A. B. C. Drew, New Bedford, Mass.; Third Vice Chairman, Joseph A. Moses, Fitchburg, Mass.; Secretary-Treasurer, Geo. W. Reardon, Holyoke, Mass.

The above officers are to constitute the Board of Governors, with additional members to be appointed by the chairman, who was also authorized to name the chairman of the board.

John J. White was named chairman of the board by the chairman and the additional members will be named at a later date.

It was voted to hold the next meeting at New Haven, on invitation of "Si" Weiser.

Patent for New Device Granted

WATERTOWN, N. Y., December 28, 1929.—The United States Patent Office has just awarded a patent to Charles W. Valentine on a new device which is expected to prove of value in the paper making industry. The invention is described as a machine for winding cloth or paper web material on rolls. He applied for the patent in 1926 and the rights have been assigned to the Bagley & Sewall Company.

VICKERY DOCTORS

On breast rolls
—lengthen wire life

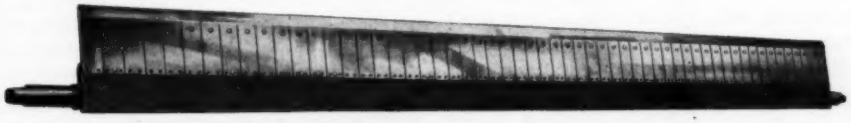
On press rolls
—reduce pick-ups and breaks

On dryers
—improve finish and increase drying economy

On calenders
—assure uniform paper finish

On all rolls
—keep surfaces always clean without fitting or adjustment
—make for the continuous production of uniformly good paper

May we show you?



BIRD MACHINE COMPANY
South Walpole ▲ Massachusetts

3148

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Chicago, Ill.—The Cromwell Paper Company, 4801 South Whipple street, has plans under way for a new addition to plant on site at South Whipple and Forty-seventh street, to be one-story, reported to cost about $55,000, with equipment. A. Epstein, 2001 West Pershing Road, is engineer, and will take bids on general contract in about 30 days.

Bogalusa, La.—The Bogalusa Paper Company is said to be considering a new addition to mill, size and details soon to be determined. It will be used for increased capacity.

Middletown, Ohio—The Wren Paper Company has awarded a general contract for the construction of a new building on First avenue, near Water street, to the F. K. Vaughn Building Company, Hamilton, Ohio. It will be one-story, designed for storage and distributing service. Estimated cost has not been announced.

Springfield, Mo.—The Springfield Tablet Manufacturing Company, 300 North Jefferson street, has approved final plans for new plant addition for the manufacture of paper tablets and other commercial paper products, to be one and two-story, L-shaped, 60x120 feet, and 50x60 feet. General contract recently was awarded to M. E. Gillioz, Monett, Mo.; contract for heating, plumbing and ventilating has been let to J. B. McCarty, 423 St. Louis street. It is expected to have the unit ready for service at an early date. Baldwin & Baldwin, Magnolia Building, Oklahoma City, Okla., are architects.

Jamestown, N. Y.—The T. James Clarke Box and Label Works, Inc., recently organized with a capital of $100,000, by T. James Clarke, 38 Charles street, and associates, is said to be planning the operation of a local plant for the manufacture of paper boxes and containers. Extensive capacity will be developed. Henry A. Beekman, 621 Newland avenue, Jamestown, is interested in the new organization.

Chicago, Ill.—The W. A. Johns Paper Company, 526 West 18th street, has leased the three-story building at corner of Union avenue and Twenty-second street, owned by the Chevrolet Motor Company, and will ocupy a portion of the structure for expansion, including storage and distributing facilities. The lease is for a term of years and aggregates $92,000.

Wisconsin Rapids, Wis.—The Consolidated Water Power and Paper Company, Wisconsin Rapids, is pushing construction on a new brick, steel and concrete addition, to be equipped as a sulphite mill unit, and proposes to have the structure ready for service at an early date. It will be one-story, arranged in three sections, 40x42 feet, 40x41 feet, and 30x50 feet, respectively, and is reported to cost more than $60,000, with equipment.

Everett, Wash.—The International Wood and Sulphite Company, a subsidiary of the Zellerbach Corporation, San Francisco, Cal., has arranged a contract with the Clark Nickerson Lumber Company, Everett, for wood waste from its mill, to be utilized as raw material for pulp manufacture. The lumber company is said to be planning a general expansion and improvement program for increased capacity, reported to cost more than $200,000, with equipment. The development will include the installation of a conveying system and other facilities for delivering the wood waste to the International company. A. E. McIntosh is general manager.

Philadelphia, Pa.—Fire, December 25, damaged a two-story building at the plant of the Dill & Collins company, Tioga and Richmond streets. An official estimate of loss has not been announced. The damage will be replaced.

Leesburg, Fla.—The Lake Griffen Pulp and Paper Company is being organized by local interests, and will be represented by Mary J. Cassady, Leesburg. The new company is said to be planning the establishment of a pulp and paper mill in the vicinity of Lake Griffen, near Leesburg, and for which it is expected to have detailed plans drawn at an early date.

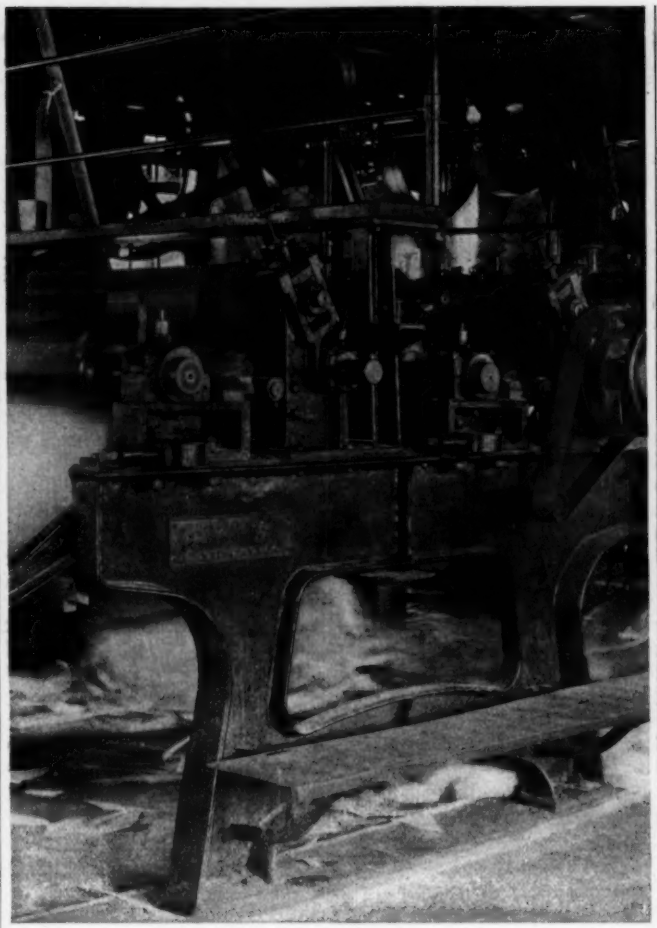
Parkersburg, W. Va.—The Viscose Company of America, Inc., Marcus Hook, Pa., has awarded a contract to the McClintic-Marshall Company, Oliver Building, Pittsburgh, Pa., for structural steel framing for a new addition to its mill at Parkersburg, entire project reported to cost more than $350,000, with equipment. It is expected to place work under way early in 1930; the unit will be used for increased capacity. The company has work in progress on an extension to its mill at Roanoke, Va., consisting of a one-story, sawtooth roof type structure, 165x180 feet, estimated to cost about $160,000, with equipment. General contract is being handled by John P. Pettyjohn & Son, Lynchburg, Va.

Canton, N. C.—The Champion Fibre Company is said to be arranging an expansion and improvement program during the coming year, continuing work recently projected for increased capacity. The entire development is reported to cost more than $200,000, and will include new buildings and equipment.

Chicago, Ill.—The Continental Diamond Fibre Company, 2100 North Racine avenue, has superstructure in progress for proposed new one-story addition, 36x50 feet, recently referred to in these columns, and proposes to have the structure ready for service at an early date. It will cost about $35,000, with equipment.

Erie, Pa.—The Hammermill Paper Company is operating on a full production schedule at its local mill, with full working force, and will continue on such basis for an indefinite period. The past year has been the best operating period in the history of the organization, and 1930 is expected to duplicate the high rate of output. The Grays Harbor Pulp and Paper Company, Hoquiam, Wash., an affiliated interest, is also holding to a capacity schedule, and expects to hold to that basis indefinitely.

South Bend, Wash.—The Willapa Pulp and Paper Mills, Pacific Building, Portland, Ore., have superstructure under way for proposed new local pulp and paper mill, a considerable portion of the work to be carried out by day labor. Steel erection contract has been let to the Star Iron & Steel Company, Tacoma, Wash.; and award for cement has been let to the Northwestern Portland Cement Company, Wilcox Building, Portland. The entire project is reported to cost close to $700,000, with equipment. L. A. DeGuere, Wisconsin Rapids, Wis., and Perkins Building, Tacoma, Wash., is consulting engineer. R. A. Swain is president and general manager.



RELIABLE

We build Cutters in Duplex and Triplex Types with Single, Duplex and Revolving Slitters. . . . Cutters have easy adjustment for squaring sheet while running. . . . These and other Downingtown Cutters and Slitters are fully described in our new Bulletin 109. . . . Write for it today and when in need of any paper mill machinery,—let us bid on your requirements.

DOWNINGTOWN MFG. CO.
DOWNINGTOWN, PA., U. S. A.

What the Forests Mean to the Paper Industry*

By F. H. Johnson[1]

The advancement of our civilization from the conditions and the standards of the latter part of the eighteenth century has been the result of a development due to increased educational facilities; greater knowledge of conditions outside of the individual's immediate sphere, and greater ease of communication of ideas and experiences.

In each phase of this development, paper has played an important part. The increase in production and the improvement of process of our pulp and paper industry have gone hand in hand with the other advances of the nineteenth century and the first quarter of the twentieth century.

The paper industry (pulp and paper) now ranks seventh in the industries of our country,—having a production capacity of 12,500,000 tons annually and valuation of over $1,000,000,000.00.

In fact, the present age is so dependent on paper for its very existence, that industry throughout the nation would be slightly handicapped by a paper shortage.

The future life and continued success of the paper industry is absolutely dependent on the principal source of raw material; namely, the forests.

Materials other than wood have been, and are being, tried out; but have not been successful for large scale or commercial operation, because of high cost of raw materials, of transportation or of storage in the case of seasonal products. Also, the conditions in the paper consumers' operations are demanding a product which will allow them greater speed of production, and a better grade of paper than that which was acceptable a few years ago.

For some years the pulp and paper makers of our nation have been actively engaged in efforts to "get more wood out of a cord," and more pulp and paper from the same amount of raw materials. This work has been wonderfully assisted by the United States Department of Agriculture through their efforts at the Forest Products Laboratories at Madison, Wis. In these laboratories, much research has been accomplished and the results passed on to the pulp and paper manufacturers, who, by skillful adaptation of laboratory figures to commercial mill operation, have been able to operate their mills, not only more economically as regards costs, but have reduced waste, and are now utilizing woods which have not been acceptable to their then prevalent processes. In this way they have added years to the life of our timber supply.

In order to bring before you in figures the growth of our industry, let me quote the following:

In 1870—2000 cords of wood were used for paper making in our country.

In 1880—40,000 cords were used.

In 1890—580,000 cords were used.

While in 1920, or just 50 years after the first census basis for an estimate of wood as a raw material for paper making, in the United States, was made, the consumption was 6,000,000 cords.

In 1926, we find that the amount of wood necessary for all the pulp produced in this country was 9,924,007 cords—while the grand total wood necessary to furnish the paper consumed in this country in that year was 12,574,000 cords; or more than double the amount of wood cut in this country in that year—(viz. 5,489,517 cords).

The figures which have been quoted are taken from Royal S. Kellog's book, "Wood Pulp and Pulp Wood in North America," and also from "Bulletin" 1241—of the United States Department of Agriculture—entitled "How the United States Can Meet Its Present and Future Pulp Wood Requirements," by Earl H. Clapp, and Charles W. Boyce, both of the Forest Service.

These figures, I realize, are not entirely applicable to our own State of West Virginia, but I feel that they are representative of a condition which must be faced, namely—that every effort should be made to encourage land owners to seriously consider re-forestration of suitable woods by practical selective operations.

These points under present conditions are not feasible in some states because of the cost of taxes, land valuations, etc., but they are applicable to forest conditions in every state in our country were woods of grades suitable for pulp utilization are found.

Quoting from Royal S. Kellogg's book—Mr. Kellogg predicts the following, "No saturation point can be predicted if the public can get cheaply and abundantly the paper it is capable of using. Increased consumption will stop when it is forced by higher costs for material and labor."

Further quotation from the same author,—"There never was paper enough in the world until it was made of wood. But little more than thirty years ago an English authority hailed the development of the use of wood as supplying an "inexhaustible source" of useful fibre for paper making. Today we know that our resources are being drawn upon too heavily, and that without better forest protection and more care for reproduction, the pinch of scarcity of paper making materials will again be felt.

In closing, I refer once more to Bulletin 1241, before mentioned, where on page sixty we find the following:

"The consideration of possible timber growth, therefore, affords a necessary background both from the standpoint of the public interest and that of the pulp and paper industry, for the solution of the whole pulp and paper problem."

* Address delivered at the West Virginia Commercial Forestry Conference, Charleston, W. Va., December, 1929.

[1] Cherry River Paper Company, Richwood, W. Va.

Canadian Hydro-Electric Corp. Makes Record

The Canadian Hydro-Electric Corporation, Limited, controlled by the International Hydro-Electric System, a division of the International Paper and Power Company, produced 209,236,000 kilowatt hours of electric energy in November, a new high record for a single month. This output is 35 per cent over the output of the Corporation in November of last year and two and two-thirds times that of November, 1927.

In the first eleven months of this year the plants of the corporation generated 1,896,502,000 kilowatt hours, 46 per cent. over the output of the corporation in the full year 1928, 67 per cent, greater than that in the first eleven months of last year, and over four times that of the corresponding period of 1927. The output of the corporation in the twelve months ended November 30 was 2,056,711,000 kilowatt hours, an increase of 68 per cent. over the output of the Corporation in the twelve months ended November 30, 1928.

The rapid growth of the corporation in the electric power field in Canada is further reflected by the fact that while the output of electric energy in the first ten months of this year—the latest figures available—of all Canadian central station hydro-electric plants increased 11 per cent. over their output in the first ten months of last year, the output of the Corporation's plants increased 63 per cent in the same period. Those figures also indicate the rapidly increasing consumption of electric energy in the area supplied by energy from the Corporation's plants.

Tracing Paper Tested

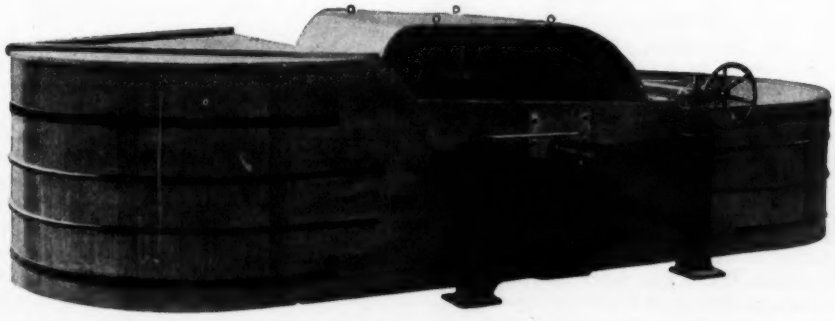
A tracing paper developed commercially, which is unique in that its transparency is secured in the paper-making process and not by after-treatments, was recently tested at the Bureau of Standards, Washington, D. C. The paper is made from rag fibers. It compared favorably with tracing cloth in strength and while considerably less transparent than the latter, it apparently had sufficient transparency for many purposes.

An Emerson High Density, High Speed Beater in the mill of a nationally known maker of bonds and cover stock. Built to handle 1800 lbs., a 2500 lb. load was running in the beater when the picture was taken.

3 old style beaters, each handling 1200 lbs. at 3% density, took 180 H.P. 3 Emerson High Density, High Speed Beaters shown above, each handling 1850 lbs. of the same stock at 7% density, use 170 H.P., *effect a 50% power saving over the old beater room.*

Let Emerson modernize your beater room

Emerson engineering and beater design have kept abreast of papermaking . . . High density, high speed beaters reduce beating time, save power, handle heavy loads without trouble . . . Emerson beaters built to meet *specific* mill requirements lower beater room costs, maintain quality and uniformity, give steady, dependable service . . . New mills are completely equipping their beater rooms with modern Emerson beaters, others are installing them to replace obsolete equipment, bringing their plants up to date. . . . Ask us to show what they can do for you.



10 low cost Emerson High Density, High Speed Beaters, similar to the one above, are operating in a mill making high grade papers. Name on request.

The Emerson Manufacturing Company

Lawrence • • • Massachusetts

Division of John W. Bolton & Sons, Inc.

3477

Accident Prevention Certificates Awarded

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., December 28, 1929.—A number of firms in this district have been awarded certificates for excellence in accident prevention as a result of the annual accident prevention campaign recently conducted by Associated Industries of New York State. Many paper manufacturing concerns in this state were enrolled in the contest. Of the total of approximately 1200 firms completing the contest which ended November 30, it was announced that 56 were still free from accidents at the conclusion of the thirteen weeks period. Those 556 firms employed 56,707 workers in all lines of industrial operations who during the campaign worked a total of 32,398,106 hours without accident. The 1200 firms participating in the drive employed a total of nearly 300,000 manual workers who worked more than 168,000,000 hours with a loss of time through accidents of one-fourth of one per cent of the total time worked. While the percentage of lost time through accidents was higher than during a similar period in 1928 there was an actual decrease in the number of accidents per 100 men exposed.

Firms were divided into groups, according to their size and the nature of their hazard, and to the firm creating the best record in each group Associated Industries will award a mounted plaque. To all firms having records of 100 per cent but with insufficient exposure to qualify for the group trophy an award of certificates of merit will be made. The increase in severity shown in the campaign is attributed to an unusual number of accidental deaths, these having risen from six in 1928 to nine in the most recent drive. This figure is still below 1927 when with fewer firms and fewer employes exposed a total of 13 deaths were reported.

Maxwell Wheeler, president of Associated Industries, said that the campaigns were originated in the belief that concerted and co-operative action by management and men in a single statewide campaign would result in a direct saving in lives, limbs and wages. He claims that this belief has been justified in the great interest shown by both employers and employes and the results attained.

News of the Toronto Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., December 30, 1929.—William Schlausser, of Milwaukee, buyer for the Central Paper Company, Muskegon, Mich., which makes kraft paper, was recently in Sault Ste. Marie looking for wood for the mill. M. Fenlon, who operates at Mileage 28, was unable to supply any of the wood wanted as his output this season consists almost entirely of ties. Mr. Fenlon suggests that Sault Ste. Marie might build a kraft paper mill to use the material now wasted in the woods and says that a mill of this kind can use practically every kind of wood, including over-seasoned wood.

Georgetown, Ont., is one of the oldest and most substantial centers in Canada. Recently the business men of the town had a radio broadcast to set forth the attractions and advantages of the place. J. B. Mackenzie, Mayor, stated that paper was the major industry in Georgetown, with the Provincial Paper and the Alliance Paper Companies employing about 350 hands and manufacturing and distributing paper to the value of $3,000,000 annually. It was pointed out that Georgetown is the site of Canada's first paper mill, Barber Bros. having started this industry in 1904.

W. E. Sharpe, of the Canada Printing Ink Company, Toronto, has had published a booklet entitled "On the Spanish Main," containing a few observations on life in the West Indies which he recently visited. The book is well written and paper men and printers who received a copy for Christmas read it with a good deal of interest.

Martin Paper Products, Ltd., have just completed a factory at t. Boniface, Man., for the manufacture of corrugated containers and other paper products. The approximate cost of the plant and machinery was $235,000 and the president of the company is John Martin, former owner of the John Martin Paper Company, Winnipeg, who handled Provincial Paper's output in the West.

D. H. Ross and George E. Lawrence, of Dominion Envelope and Cartons (Western) Ltd., Winnipeg, were in Toronto over the Christmas holidays. Mr. Ross proceeded on a visit to Scotland and Mr. Lawrence visited friends in and about the city.

Chicago Paper Trade Happenings

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., December 30, 1929.—Meetings of the various associations in Chicago slowed up in number considerably during the past ten days with most organizations postponing activity until far into January. The Chicago Paper Association, according to D. F. Peck, president, opens its new year's activities on January 14 with a meeting at the Bismarck Hotel. The Chicago division of the Salesmen's Association reopens its meeting schedule on Monday, January 6, with a discussion at the Hamilton Club. The meeting of the Paperboard Industries Association at the Drake Hotel, Chicago, on January 21, 22 and 23, will be a feature event of the month's activities, paperboard, container and folding box manufacturers coming to Chicago from all parts of the country.

Samples of Management Bond, manufactured by the Hammermill Paper Company, have been received by Chicago printers and advertising agencies. They were distributed in Chicago by the Hammermill distributors, Swigart Paper Company, and Bradner, Smith & Co. The paper, according to the statement, is well suited for the printing of office and commercial forms.

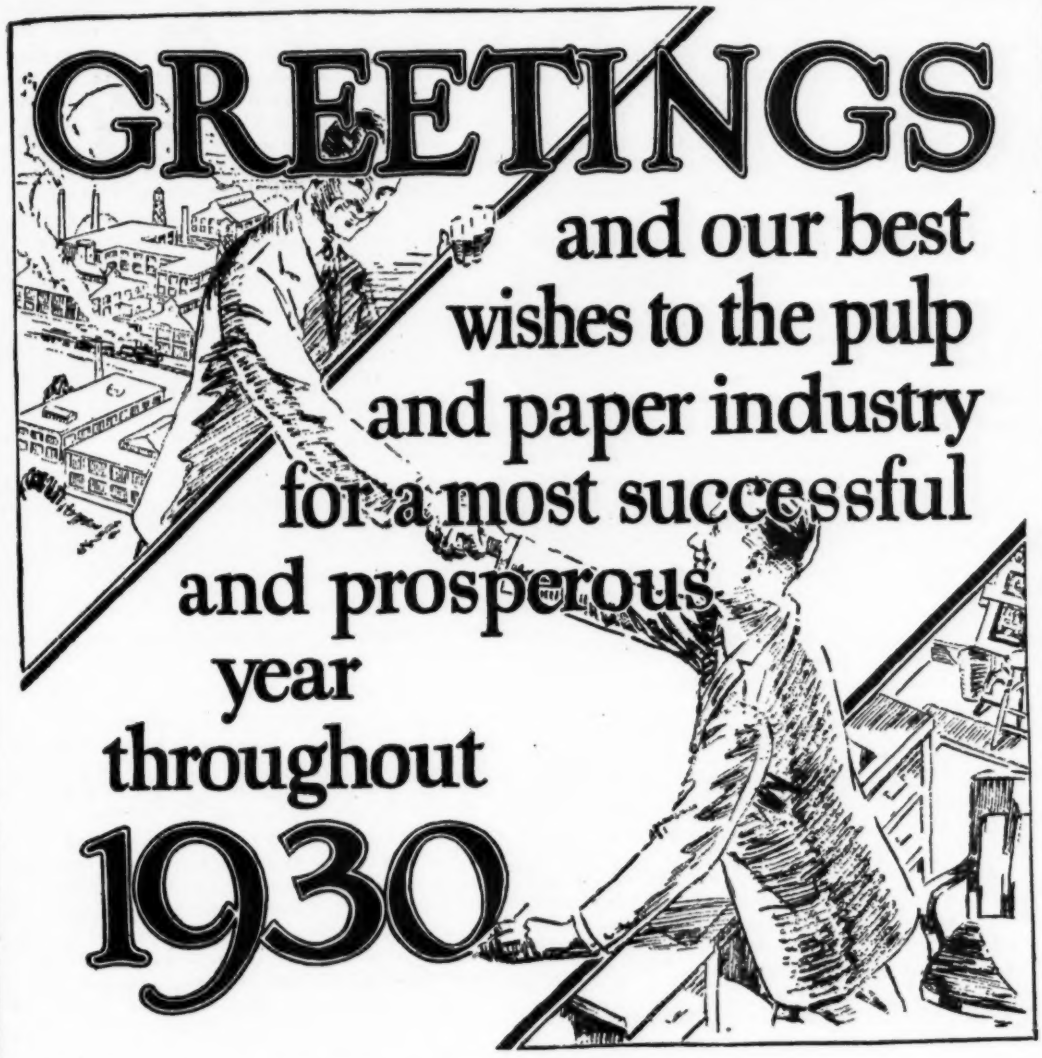
Gaw-O'Hara Envelope Company, 500 North Sacremento Boulevard, Chicago, is distributing samples of Claremont Armorplate, made by the Claremont Paper Company, used in the manufacture of P. D. Q. Claremont envelopes. It is an all-spruce sulphate kraft with long pliable fiber insuring unusual strength and resistance. The envelope containing this announcement of Claremont Armorplate also includes direct mail from the Bureau of Envelope Manufacturers of America. The title of this message from the Bureau is "Good Envelopes are just Good Business."

Harold Knott, president of the Chicago division of the Salesmen's Association of the Paper Industry, and representative in this territory of the Eastern Manufacturing Company, is spending the holidays at his former home in Boston and in the eastern offices of Eastern in New York. He will return from this combined business and pleasure trip early next week.

Chicago Paper Market Steady

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., December 30, 1929.—Holiday week in Chicago was seasonally normal as far as activity in the paper market was concerned. A natural slackening in demand was reported with some mills entirely shut down for the period. A number of paper representatives and jobbers were out of the city for the holidays. No association activities were reported. A summing up of possible business for January, 1930, indicated that no small amount of optimism was prevalent. Orders booked in December are expected to keep many of the lines well occupied until at least the middle of January. While some slowing up is expected during inventory period the paper market during 1930 is expected to be strong. News print representatives report a satisfactory condition in that market. Fine paper jobbers and sales representatives state that 1929 was one of the best years they ever had and believe that 1930 will see a continuation of this strength. Over production—long a bug-a-boo with fine paper manufacturers and dealers, seems to have been satisfactorily weeded out. Prices are also reported to be strengthened materially. Book and cover papers will carry over strongly into 1930. Likewise wrapping papers and tissues. Board, fundamentally sound, looks toward a better year in 1930. In the waste paper markets, the low grades continue to suffer because of slump in the board market. The higher grades remain about the same.



J. O. ROSS ENGINEERING CORPORATION

208 W. Washington Street, CHICAGO — Main Office—122 E. 42nd Street, NEW YORK — 519 American Bank Bldg., PORTLAND, ORE.

ROSS ENGINEERING OF CANADA, LIMITED
NEW BIRKS BLDG., MONTREAL

ROSS SYSTEMS
HEATING—VENTILATING—DRYING

New York Trade Jottings

The Scott Paper Company has applied to the New York Stock Exchange for listing of 3,060 additional shares of common stock, without nominal or par value.

* * *

Application has been received by the New York Stock Exchange for the listing of 117,514 additional shares of Class A common stock, par value $20, of the Container Corporation of America.

* * *

The New York Division of the Salesmen's Association of the Paper Industry will resume its weekly luncheons and meetings next Monday, January 6, at the Fraternities Club, New York, when Irving Fellmer, of the McGraw-Hill Publishing Company, will address the gathering on "The Application to a Marketing Problem."

* * *

G. F. Steele & Co., Inc., of 33 West 42nd street, New York, announce that Victor C. Coudert will become a vice-president of the company on January 1, 1930, and will make his headquarters in New York. Mr. Coudert is favorably known to all publishers in the southern and south-western sections of the United States. He has had large experience in the sale of news print paper and it is expected that the service to be rendered to the customers of the Powell River Company, Ltd., of Vancouver, B. C., will be made more effective.

* * *

A. J. Sachs, formerly secretary and general sales manager of the Public Service Cup Company, makers of Lily Cups, has established offices at 110 East 42nd street, New York. With the merger of this company and the Tulip Cup Corporation he was elected vice-president in charge of the sales organization of the new company, the Lily-Tulip Cup Corporation. Mr. Sachs will personally represent manufacturers of paper goods to the jobbing trade. Because of his fifteen years' successful sales experience and contact in the field of paper drinking cups and paper specialties, he has a host of friends among the paper jobbing fraternity. His general reputation for fair dealing and co-operative work with the jobbers assures him a hearty welcome by all who know him, and augurs well for the success of his present venture as New York sales agent. It is Mr. Sachs' intention to confine his personal efforts to a limited number of select lines to the paper jobbing trade.

Stuebing-Cowan Truck Co. to Move

HOLYOKE, Mass., December 31, 1929.—The Steubing-Cowan Truck Company a subsidiary of the Yale & Towne Manufacturing Company, will move their local plant to Philadelphia it was announced the past week the change taking place today. The concern manufactures various types of mill trucks and was founded by Herbert W. Cowan in 1910. A factory was built for it by the White & Wyckoff Company, manufacturing stationers, whose business grew to such an extent that in 1927 they desired to use the building and the truck business secured quarters in the building owned by the city, formerly the Hadley Thread Mills. Theodore T. Ludlum is manager and Philip E. Ladd assistant manager and they will both remove to Philadelphia.

Knowlton Celebrates 59th Wedding Anniversary

WATERTOWN, N. Y., December 28, 1929.—George Knowlton, president of Knowlton Brothers Paper Company, recently celebrated his 59th wedding anniversary. He had been a lifelong resident of the city where he was born in 1840 and on the occasion of his marriage anniversary he was the recipient of congratulations from his many friends. He entered the paper making business at the age of sixteen and has risen to a prominent place in the industry. Mr. Knowlton celebrated his 90th birthday in August and he is still active in business.

Inspection of Rosin Gradually Increasing

Federal inspectors working under the service feature of the U. S. Naval Stores Act, graded 10,727 more round barrels of rosin in the first four months of the present fiscal year than was graded under the act in the same months the year before, says Dr. F. P. Veitch, in charge of naval stores control, Food, Drug, and Insecticide Administration, U. S. Department of Agriculture. In the period July-October in 1928 the total amount of rosin graded was 72,320 round barrels; in the same months of 1929 the total was 83,047 round barrels.

Since the service feature of the Naval Stores Act was inaugurated (in 1926) the regular grading of rosin at the stills for producers has gradually grown until now practically all the rosin produced in Louisiana, Texas, and Mississippi is Government-graded. Some Alabama rosin is now being graded by request, and this year, for the first time, the inspectors were called into Georgia to grade rosin regularly for several producers in that State.

The cost of Government grading is 7 cents per barrel or package, which the Department of Agriculture collects from the person requesting the service. The revenue from the service is barely sufficient to cover the cost of it.

The Department of Agriculture is making plans to meet any additional requests for Government grading which may come from producers not served at present.

The Government renders the service for the benefit of both the producer and the consumer.

Conklingville Dam Assessments Fixed

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., December 28, 1929.—Under a resolution adopted this week by the Board of Supervisors of Warren County the sum of $97,457.79 was fixed as the fifth installment which manufacturing firms will be obliged to pay as their share in constructing the Conklingville dam and reservoir. The portion of the cost to be borne by each was determined by the Hudson River Regulating District. This resolution authorizes the supervisors to extend the assessments with the taxes on mill properties and the city chamberlain to collect installments as follows:

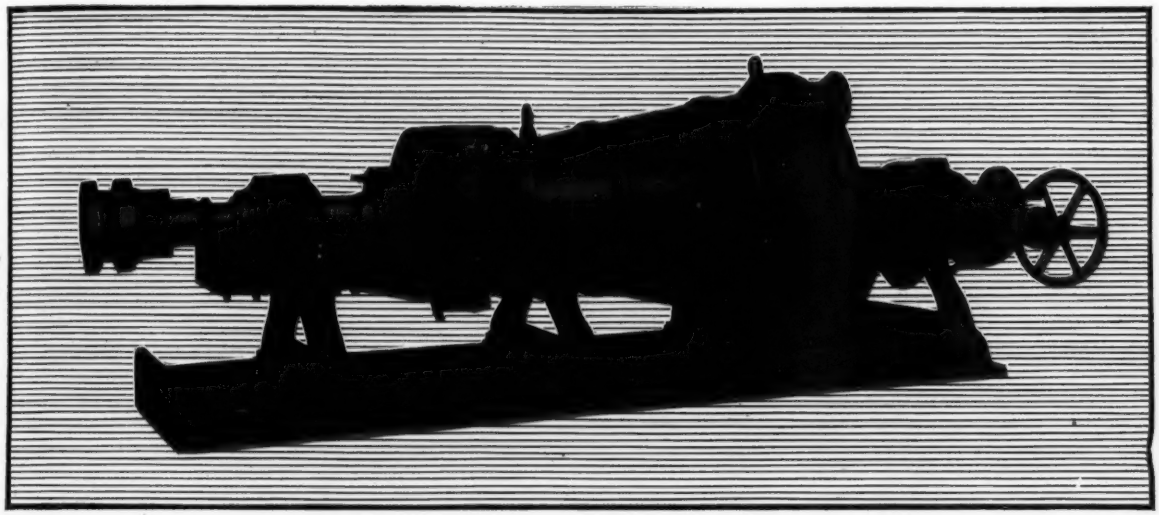
Finch, Pruyn & Co., Glens Falls, total portion of cost $282,960, fifth installment $21,463. II; Town of Queensbury, Moreau Manufacturing Company, total portion of cost 10,800, fifth installment $819.20; International Paper Company, total portion of cost $753,840, fifth installment $57,180.33; Town of Luzerne, International Paper Company, total portion of cost $17,100, fifth installment $1,297.07; New York Power and Light Corporation, total portion of cost $102,780, fifth installment $7,796.08; International Paper Company, total portion of cost $110,430, fifth installment $8,376.35; Warren Curtis Manufacturing Company, total portion of cost, $6,978, fifth installment $525.65.

Foreman Severely Injured at West End Mill

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., December 28, 1929.—Charles S. Rushlow, foreman on the construction project at the mill of the West End Paper Company, was severely injured this week when he slipped from an ice glazed boom 140 feet in the air after he had voluntarily crept out on it to try to free a cable which had become frozen. His fall terminated on a scaffold below and he suffered a fractured skull, broken back and a fractured hip. He was a member of a gang of workmen who were working upon the hoist which is used to lift steel from the ground to the roof of the paper mill. It is believed that the steel cable at the outer end of the boom became frozen over and Mr. Rushlow volunteered to free it. Workmen rushed to his aid when he fell and was taken to the city hospital in a semi-conscious condition. Physicians who attended him said his recovery was doubtful.

ANNOUNCING



A NEW, IMPROVED JORDAN

Just as every paper manufacturer must sense the requirements of the paper market, so we—as manufacturers of paper and pulp mill equipment—have long sensed the need for a better Jordan Engine.

And it has come—the new improved VALLEY JORDAN!

It has a split shell which permits quick and easy access to the plug and shell . . . . anti-friction bearings with all their attendant advantages . . . . stationary motor . . . . new type bandless plug bars . . . . flexible telescopic coupling . . . . correct alignment of knives . . . . heavy rigid construction minimizing vibration . . . . extremely fine adjustment . . . . less floor space . . . . and very low maintenance cost.

To paper mill men interested in the new standard of efficiency which the Valley Jordan introduces, complete information will be sent on request. Address the Valley Iron Works Company, Appleton, Wisconsin.

VALLEY

Equipment for Paper and Pulp Mills

New York Office: 350 Madison Ave.
Western Manufacturing & Sales Division: Smith & Valley Iron Works Co., Portland, Oregon
Canadian Representatives: Pulp & Paper Mill Accessories, Ltd., Montreal, Canada

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending October 31, and for the Ten Months Ending October 31, 1929 as Compared with Corresponding Month of Previous Year

IMPORTS—PAPER

	October				Ten Months Ending October 31			
	1928		1929		1928		1929	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper and Manufactures	.....	$14,370,483	.....	$14,929,520	.....	$127,777,150	.....	$133,725,833
Printing paper—								
Standard newsprint ..... lbs...free	400,524,367	12,734,950	442,019,731	13,167,105	3,495,248,711	113,548,374	3,938,135,363	117,915,774
Imported from—								
Finland ..... lbs.	8,587,265	217,910	6,990,657	173,301	62,267,601	1,618,387	53,872,963	1,303,233
Germany ..... lbs.	2,173,762	56,692	1,389,122	33,259	15,364,787	415,010	15,839,503	389,009
Norway ..... lbs.	3,016,633	99,225	794,321	19,728	16,805,532	452,245	5,574,119	139,121
Sweden ..... lbs.	11,856,600	301,617	11,396,899	288,043	89,194,893	2,365,916	84,444,663	2,148,490
Canada ..... lbs.	349,303,477	11,299,773	402,427,418	12,033,821	3,157,604,400	103,838,453	3,562,802,959	107,804,997
Newfoundland and Labrador ..... lbs.	25,568,550	759,174	19,021,314	618,953	153,304,916	4,837,765	215,354,408	6,125,629
Other countries ..... lbs.	18,080	559	.....	.....	706,582	20,598	246,748	5,295
All other n. e. s. ..... lbs...dut.	545,951	25,061	516,931	25,584	6,301,167	294,255	3,755,578	187,810
Grease-proof and water-proof papers ...lbs...dut.	109,068	19,127	195,087	58,424	1,066,486	195,719	1,497,328	377,371
Kraft wrapping paper ..... lbs...dut.	1,738,884	73,778	1,237,992	52,278	8,893,753	381,030	8,451,717	362,639
Other wrapping paper ..... lbs...dut.	1,190,311	33,423	578,519	15,261	14,092,149	334,607	6,281,986	180,099
Writing, letter, drawing, etc., papers ..lbs...dut.	296,440	92,324	341,957	104,875	2,577,465	677,376	2,731,281	736,064
Surface-coated paper ..... lbs...dut.	232,232	113,402	193,913	78,853	1,975,040	932,845	2,062,792	877,676
Tissue, copying, etc., papers ..... lbs...dut.	423,156	202,322	544,660	290,982	2,917,680	1,667,100	4,172,198	2,201,465
Paper boards, n. e. s.—								
Pulp boards in rolls ..... lbs...dut.	5,391,320	116,947	5,882,644	129,017	44,532,812	971,545	50,499,399	1,097,127
Paper boards, pulp board, and card-board ..... lbs...dut.	1,805,412	55,376	1,328,042	32,397	18,377,156	413,836	17,434,078	413,792
Leather board, test, and wall board..lbs...dut.	140,392	3,420	98,313	4,956	751,678	20,902	1,492,774	60,133
Cigarette paper, cigarette books, and covers ..... lbs...dut.	1,180,726	321,865	1,114,911	355,010	9,540,675	2,586,384	10,075,931	3,379,633
Hanging paper, (wall paper) ..... lbs...dut.	82,851	36,089	225,692	46,881	1,656,479	542,809	2,168,974	597,148
Duplex decalcomania paper, not printed.lbs...free	68,388	16,110	29,644	7,083	595,684	134,277	511,614	128,623
Paper boxes ..... dut.	.....	160,776	.....	167,150	.....	1,518,716	.....	1,491,459
Pulp or papier-mâché and manufactures, n. e. s. ..... dut.	.....	37,091	.....	47,617	.....	365,644	.....	486,608
All other paper and manufactures ..... dut.	.....	328,522	.....	346,047	.....	3,191,731	.....	3,232,412

WOOD PULP

Mechanically ground wood pulp ..... tons...free	21,325	539,571	24,125	584,657	180,715	4,430,994	192,904	4,865,512
Sulphite wood pulp ..... tons	94,159	5,463,648	89,765	5,267,437	769,360	45,284,323	857,073	50,295,513
Unbleached ..... tons..free	66,616	3,391,638	61,584	3,119,916	519,249	26,331,775	579,639	29,238,582
Bleached ..... tons...free	27,543	2,072,010	28,181	2,147,521	250,111	18,952,548	277,434	21,056,931
Imported from—								
Finland ..... tons	8,187	360,012	4,656	219,452	80,659	3,515,120	88,535	4,285,900
Germany ..... tons	6,824	428,746	5,445	385,187	51,753	3,434,978	53,058	3,693,418
Norway ..... tons	6,453	445,819	5,093	361,615	52,501	3,555,580	49,373	3,375,834
Sweden ..... tons	38,440	2,109,508	36,592	1,980,197	258,273	14,180,005	332,225	18,338,243
Canada ..... tons	31,809	1,991,173	36,190	2,228,681	294,235	18,834,140	315,443	19,617,708
Other countries ..... tons	2,446	128,390	1,789	92,305	31,939	1,764,500	18,439	984,410
Sulphate wood pulp, unbleached, (kraft pulp) ..... tons..free	35,103	1,911,677	38,812	2,054,759	287,859	16,082,272	318,787	17,135,276
Imported from—								
Finland ..... tons	2,343	109,909	802	33,292	21,615	962,381	23,420	1,114,834
Norway ..... tons	1,221	67,857	2,508	126,223	10,541	554,649	14,428	754,805
Sweden ..... tons	19,190	970,748	25,628	1,302,043	138,361	7,240,412	183,153	9,302,418
Canada ..... tons	11,943	743,022	9,353	569,946	114,397	7,191,495	92,563	5,722,678
Other countries ..... tons	406	20,141	521	23,255	2,945	133,335	5,223	240,541
Sulphate wood pulp, bleached ..... tons..free	3,338	197,926	1,209	104,624	12,040	740,115	12,562	946,857
Other pulp ..... tons..free	536	41,233	462	51,351	5,743	387,839	4,985	422,416

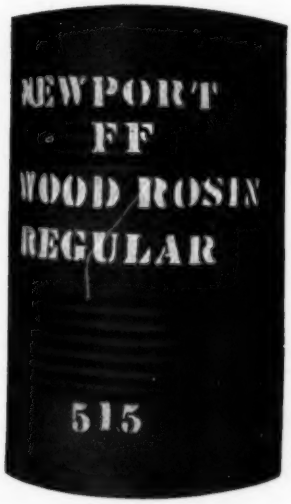
CRUDE PAPER STOCK

Rags for paper stock ..... lbs...free	38,570,770	752,020	42,341,319	986,095	372,106,029	6,855,282	369,779,107	7,769,762
Waste bagging, waste paper, etc. ..... lbs...free	13,493,879	180,301	12,239,324	125,810	127,613,190	1,712,110	122,907,183	1,451,692
Old rope and all other paper stock .... lbs...free	5,425,830	195,273	10,898,367	275,001	51,220,428	1,569,205	104,326,861	3,064,906

CHEMICALS AND OTHER PAPER MAKERS' MATERIALS

Colors, dyes, stains, color acids, and color bases, n. e. s. ..... lbs...dut.	542,908	631,700	628,265	671,383	5,013,914	5,551,414	6,467,718	7,237,303
Imported from—								
Belgium ..... lbs.	4,919	9,844	16,101	20,339	99,661	121,322	66,313	81,211
France ..... lbs.	3,221	3,885	3,256	3,298	60,201	71,632	106,219	156,552
Germany ..... lbs.	315,584	345,944	321,131	326,029	3,206,367	3,369,974	4,086,544	4,421,869
Italy ..... lbs.	3,469	2,540	2,980	2,413	53,838	50,413	11,208	9,487
Switzerland ..... lbs.	195,531	248,619	272,844	305,763	1,250,538	1,668,063	2,076,753	2,432,069
United Kingdom ..... lbs.	4,661	5,119	9,684	9,482	87,639	82,425	73,294	82,220
Other countries ..... lbs.	15,523	15,749	2,269	4,059	155,670	187,585	47,387	53,895
Casein or lactarene ..... lbs...dut.	1,740,539	218,867	2,199,239	264,421	25,510,107	3,295,043	24,038,622	2,879,086
Kaolin, china, and paper clay ..... tons..dut.	18,535	206,742	16,409	183,706	220,143	2,331,983	221,865	2,406,294

(*Continued on page 40*)



MORE STEEL DRUMS
ARE USED EACH YEAR
AS PACKAGES FOR
NEWPORT
WOOD ROSINS

HIGH SIZING EFFICIENCY IS RESPONSIBLE FOR THE EMINENT SUCCESS AND INCREASING POPULARITY OF NEWPORT REGULAR FF WOOD ROSIN WHEN USED IN MANUFACTURING PAPER SIZE.

UNIFORM ROSIN FOR UNIFORM SIZE

A Newport Product
Therefore Unexcelled

Sold the World Over by

General Naval Stores Company

Incorporated

NEW YORK	CHICAGO	CINCINNATI
PHILADELPHIA	NEW ORLEANS	MINNEAPOLIS

The oldest and largest organization in the world exclusively engaged in Selling "Steam Distilled Wood Turpentines," Pine Oil and Wood Rosin.

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

(*Continued from page 38*)

EXPORTS—PAPER

	October 1928 Quantity	October 1928 Value	October 1929 Quantity	October 1929 Value	Ten Months Ending October 31 1928 Quantity	Ten Months Ending October 31 1928 Value	Ten Months Ending October 31 1929 Quantity	Ten Months Ending October 31 1929 Value
Paper and Manufactures	.....	2,707,888	.....	3,230,427	.....	$25,349,867	.....	$31,355,545
Printing paper—								
Newsprint paper ....lbs.	2,656,571	99,898	5,616,578	185,676	18,590,837	707,606	29,386,558	1,081,751
Exported to—								
Canada ....lbs.	3,990	170	226,222	10,604	167,115	6,306	706,924	33,304
Central America ....lbs.	111,185	3,809	383,404	14,571	947,820	33,297	1,471,391	53,477
Cuba ....lbs.	201,647	8,182	378,182	10,484	3,214,314	119,079	2,878,172	103,266
South America ....lbs.	652,862	25,741	3,386,076	106,132	4,645,437	175,998	10,060,728	357,172
China, Hong Kong, and Kwantung ...lbs.	468,420	17,615	443,265	15,540	1,669,895	63,721	4,366,912	148,468
Philippine Islands ....lbs.	828,191	30,342	572,291	18,507	6,643,790	260,310	7,582,448	267,431
Other countries ....lbs.	390,276	14,039	227,138	9,838	1,302,466	48,895	2,319,983	118,633
Book paper, not coated ....lbs.	1,942,472	147,991	3,135,175	225,055	19,663,138	1,453,538	31,106,782	2,199,257
Exported to—								
Europe ....lbs.	36,445	3,572	123,126	16,236	420,146	43,785	1,515,986	139,939
Canada ....lbs.	427,048	28,101	1,236,374	71,827	7,271,967	438,722	10,188,883	608,212
Mexico ....lbs.	33,821	3,358	63,562	6,796	386,504	45,497	501,390	52,199
Cuba ....lbs.	392,814	27,389	411,661	28,675	3,874,704	284,810	4,270,071	300,837
Argentina ....lbs.	1,108	131	33,027	3,691	508,830	47,068	1,622,242	129,007
Other South America ....lbs.	184,109	13,426	65,110	5,997	1,050,211	88,609	1,123,601	94,514
China, Hong Kong, and Kwantung ...lbs.	154,370	9,925	664,774	39,310	1,707,240	138,213	5,825,476	353,235
Philippine Islands ....lbs.	257,112,	16,006	277,232	17,372	2,030,360	136,134	3,626,647	246,249
Australia ....lbs.	194,856	24,243	81,855	20,056	851,479	102,502	1,051,591	156,510
Other countries ....lbs.	280,889	21,840	178,454	15,095	1,561,697	128,198	1,380,895	118,555
Cover paper ....lbs.	146,646	26,807	193,607	32,736	1,676,226	283,431	1,751,073	297,678
Grease-proof and water-proof paper ....lbs.	388,557	58,597	173,140	37,770	2,673,658	404,338	2,420,447	442,977
Overissue newspapers ....lbs.	.....	.....	10,805,559	110,402	.....	.....	121,121,061	1,346,983
Wrapping paper ....lbs.	3,324,973	221,986	3,827,746	258,799	29,465,154	2,091,435	34,974,095	2,404,560
Surface-coated paper ....lbs.	1,165,690	107,998	690,855	83,999	8,963,225	928,523	12,422,769	1,181,309
Tissue and crêpe paper ....lbs.	372,159	89,180	386,486	86,181	4,296,779	934,167	3,955,406	890,542
Toilet paper ....lbs.	727,543	79,525	642,074	68,936	5,376,548	576,863	5,940,874	664,762
Paper towels and napkins ....lbs.	297,875	37,487	412,733	47,633	2,550,382	325,948	3,061,475	374,811
Box board ....lbs.	5,594,124	145,652	4,396,937	121,448	43,407,308	1,205,205	47,312,391	1,450,890
Bristols and bristol board ....lbs.	157,332	17,279	200,164	20,913	1,591,276	179,495	2,399,836	236,257
Other paper board and strawboard ....lbs.	3,346,994	164,516	4,292,553	194,881	35,712,274	1,850,382	38,730,435	1,728,661
Sheathing and building paper ....lbs.	1,246,705	45,789	1,900,470	62,483	11,298,908	420,600	19,467,008	652,255
Fiber insulating lath or board ....sq. ft.	.....	.....	1,981,428	68,783	.....	.....	23,340,516	779,589
Wall board of paper or pulp ....sq. ft.	6,283,422	214,967	7,953,890	268,081	47,192,195	1,593,549	58,984,246	1,927,644
Blotting paper ....lbs.	224,816	27,959	412,192	46,008	3,194,464	366,334	3,129,983	369,466
Filing folders, index cards, and other office forms ....lbs.	118,241	46,038	153,364	59,594	1,266,879	429,961	1,374,466	504,319
Papeteries, (fancy writing paper) ....lbs.	96,058	28,480	159,248	31,612	648,338	167,346	718,678	180,291
Other writing paper ....lbs.	2,470,027	231,475	2,072,782	223,521	20,177,736	2,238,911	24,086,091	2,539,192
Paper hangings, (wall paper) ....yds.	2,221,751	43,284	2,040,015	39,884	29,811,132	557,353	23,932,694	512,378
Paper bags ....lbs.	764,256	65,481	1,008,951	98,486	7,142,285	639,029	10,207,092	861,734
Boxes and cartons ....lbs.	2,485,639	176,178	2,008,587	160,884	22,603,745	1,521,107	24,302,219	1,619,771
Envelopes ....lbs.	227,291	37,175	220,049	40,113	2,039,364	332,511	2,034,137	354,143
Vulcanized fiber sheets, strips, rods, and tubes..lbs.	407,017	105,196	567,208	134,986	4,521,361	1,186,734	5,254,935	1,278,268
Manufactures of vulcanized and indurated fiber..lbs.	16,424	5,786	22,620	8,484	419,957	123,754	354,406	90,861
Cash-register and adding-machine paper ....lbs.	414,275	45,227	658,572	56,665	2,888,966	298,796	4,529,981	432,053
Other paper and paper products	.....	437,937	.....	456,414	.....	4,532,951	.....	4,953,443
WOOD PULP AND PAPER STOCK								
Sulphite wood pulp ....tons	1,643	94,936	3,297	158,768	17,442	981,823	34,264	1,841,131
Soda wood pulp ....tons	193	14,057	72	5,862	1,996	157,244	1,565	128,631
Other wood pulp ....tons	338	11,103	54	2,592	2,830	164,386	5,591	375,953
Rags and other paper stock ....lbs.	17,981,328	240,866	13,519,808	184,444	195,870,487	3,597,236	97,483,026	1,677,946
PAPER AND PULP MILL MACHINERY								
Paper and pulp mill machinery	.....	326,166	.....	322,799	.....	2,570,480	.....	3,264,110

Preservation of Publications

Inspections of the following libraries have been made by the Bureau of Standards, Washington, D. C.:—New York Public Library, University of Pennsylvania (3), Franklin Institute, Philadelphia Academy of Natural Science, Law Library of the Philadelphia Law Association and the Pennsylvania State Bar Association. Much data, valuable from the standpoint of comparative study, has been collected, and some samples of old and deteriorated books and paper for microscopical study has been loaned to the bureau by the University of Pennsylvania Library.

The air in Philadelphia was formerly badly polluted by industrial fumes, more especially sulphur dioxide much as was the case with localities surrounding such large smelters as Great Falls and Anaconda, Mont., Gareld, Utah, and Selby, Calif. The same effect observed in these localities has been noted on the vegetation of the University Botanical Gardens, but to a much lesser degree. The results of a combined investigation by the Atlantic Refining Co. and the University Botany Department showed a range in sulphur dioxide of 0.2—1.8 parts per million parts of air—1:30,000 is known to be fatal to some forms of vegetation. As a result of this investigation much of the difficulty in Philadelphia has been eliminated.

This serves to emphasize the dangerously corrosive effects of acidic gases in the air, operating in conjunction with moisture. The advantage of scrubbing of air by alkaline washers before it is applied to library stackrooms is therefore obvious. Control of other conditions—light, dust, humidity and temperature, of course follow logically.

Wisconsin River Employees Get Insured

Executives and employees of the Wisconsin River Paper and Pulp Company, of Neenah, Wis., have recently joined together in acquiring group life insurance protection. The policy was placed with the Prudential Insurance Company of America, the total amount involved being $136,000, covering 142 lives.

Each worker receives insurance protection in amounts ranging from $500 to $1,000, according to the length of service, and the policy is of the contributory type, the workers paying a part of the premiums and the employing company assuming the remainder of the expense.

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PAPER TRADE JOURNAL

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COMING EVENTS

American Paper and Pulp Association, fifty-third Convention and Meeting. Pennsylvania Hotel, February 17-20. Annual Meeting, Thursday, February 20. Annual Banquet, Grand Ball Room, Thursday, February 20.

National Paper Trade Association of the United States. Convention. Pennsylvania Hotel. February 17-19. Theatre Party "Sons of Guns," Imperial Theater; Supper-Dance, Hotel Astor, Wednesday, February 19.

Technical Association of the Pulp and Paper Industry. Convention, Pennsylvania Hotel. February 17-19. Theatre Party, "Sons of Guns," Imperial

Salesmen's Association of the Paper Industry. Annual Meeting, Pennsylvania Hotel, Tuesday, February 18. Luncheon, Tuesday, February 18.

New York Association of Dealers in Paper Mills' Supplies, Annual Banquet, Hotel Commodore, Wednesday, February 19.

Canadian Pulp and Paper Association. Annual Meeting, Pulp and Paper Research Institute, Montreal, January 31. Annual Dinner, Ritz Carlton Hotel, Montreal, January 31. Woodlands Section, Pulp and Paper Research Institute, Montreal, January 27-28. Technical Section, Engineering Institute, Montreal, January 29-30.

PAPER EXPORTS GAIN

Exports of paper and paper products from the United States during October were valued at $3,230,427, while those for September were valued at $2,993,176, and those for October, 1928, $2,707,888, according to the Paper Division of the Department of Commerce.

Shipments of book paper and wrapping paper increased to a considerable extent as compared with both the preceding month and the corresponding month a year ago. Exports of news print paper show a substantial increase compared with September, also October, 1928. Shipments of box board decreased somewhat under the previous month and October of last year. Bristols and bristol board, other paper board and straw board, and fiber insulating lath or board shipments decreased in comparison with September. Wall board shipments increased substantially over September, 1929, and October, last year. Exports of papeteries increased as compared with September, and the corresponding month last year. Shipments of other writing paper decreased considerably as compared with the two mentioned periods. Shipments of paper bags decreased somewhat under September, but increased considerably over October, 1928. Exports of boxes and cartons show a slight decrease under September and a considerable decrease under the corresponding month last year. Tissue and crepe paper exports decreased to some extent under September, and show a very slight increase over October of last year. Toilet paper exports show a slight increase over the previous month and a slight decrease compared with October, 1928. Envelope shipments increased slightly over September, and show a slight decrease under October, 1928. Blotting paper shows a considerable increase over both periods. In addition to paper and board, $358,274 worth of paper base stocks were exported during October, as compared with $285,702 in September, and $377,426 during October, 1928.

Imports of paper and paper manufactures into the United States during October were valued at $14,929,520, showing a rather substantial increase over the previous month and a slight increase over the corresponding month a year ago. Imports of news print paper were 442,019,731 pounds as compared with 392,246,360 pounds for September, and 400,524,367 pounds for the corresponding month last year; importations of this item during October were valued at $13,167,105, while September receipts totaled $11,617,098, and those for October, 1928, $12,734,950. Imports of other classes of paper and board during October were valued at $346,047, while those for September were valued at $355,844, and those for October, 1928, were valued at $328,522.

Imports of paper base stocks show a slight decrease in value as compared with both of the months mentioned above. Pulpwood receipts, valued at $935,821 during October, declined somewhat under the previous month and October of last year. Ground wood pulp showed a slight increase over the periods mentioned. Sulphite shipments increased considerably over September and decreased to a considerable extent as compared with October, 1928. Sulphate wood pulp imports decreased slightly under September and increased somewhat over October, 1928.

Total imports in this line were valued at $10,385,555 as compared with $10,487,066, in September, and $10,437,765 in October, 1928.

INDUSTRY MADE RECORD IN 1929

American business in 1929 reached higher levels than ever before, according to the Secretary of Commerce, Robert P. Lamont, notwithstanding recessions in some lines in the later months. Measured by quantities, not value, the output of our manufacturing industries broke all previous records, being 8 per cent higher than in 1928. The mineral production shows precisely the same percentage of gain, and here, too, a new high level was established. Freight carloadings rose by 3 per cent. Employment in manufacturing industry and the amount of wage payments were both considerably greater in 1929 than in the preceding year.

Our domestic trade, as indicated by the sales of department stores, mail-order houses, and chain-store systems, attained peaks never before touched. When allowance is made for price changes the latest figures show that in volume, our foreign commerce also reached new high levels, being much greater than even in the abnormal war period.

Commodity prices have been steady, with a slight downward tendency. There has been no undue accumulation of stocks of goods. Divided payments of industrial and public-utility corporations were about 20 per cent greater than in 1928. There was a decline of 7 per cent in failures among industrial and economical concerns, as measured by the amount of liabilities; this may be considered a dependable indicator of the general soundness of business.

The only important branch of business showing less activity in 1929 than the year before was construction—the decrease in new contracts being very largely confined to residential building.

The solid economic progress that I have indicated was not in

any sense the result of a "boom." Its very substantial character helped greatly to alleviate the effects of the marked break in prices of stock-exchange securities during October and November.

The most important single indicator of economic activity is the index of the output of the manufacturing industries. This showed an increase of approximately 20 per cent over 1923—a very active year. There was a strong demand during the year for coal and for the metals. This increased production of mineral and manufacturing commodities was reflected—as I have already mentioned in a larger movement of railway traffic.

Automobile production last year reached about 5,500,000 units, by far the largest output ever attained. Although the closing months showed a greater seasonal decline than usual, the very large production during the other months brought about an increase, for the year as a whole, of 27 per cent as compared with 1928. The exports of automobiles have rapidly increased, reaching a peak total in 1929.

While there was some advance in the general level of wholesale prices in 1928 over 1927, the year 1929 showed a slight recession. This was not the result of any sudden break. During most of the individual months, even when factories and mines were most active, the prices were somewhat lower than in the corresponding period of 1928. Increase in industrial efficiency accounts both for the greater output and the general downward tendency in prices.

The new construction contracts awarded fell off considerably. But the backlog of large contracts placed during 1928 and in the early months of 1929 made possible an actual volume of construction nearly as large as that reported for 1928. There was a lowering in the demand for materials particularly identified with residential construction, such as lumber, brick, cement, and enamelled sanitary ware.

Except possibly for certain branches of the construction industry, legitimate business found funds plentiful and reasonably cheap, despite the sharp rise of interest rates before the stock-market crash. A wide spread between the rates on brokers' loans and the rates charged to business borrowers was maintained by the Federal Reserve Board, in cooperation with the nations's bankers. Long-term business borrowing was accomplished very extensively by floating stocks on a rising market—often to retire bond issues. Thus the year-end finds most of the industries of the country with stronger capital structures, and in better cash-and-inventory positions, than at any time in our history.

Following the security liquidation in October and November, interest rates declined to the lowest levels in eighteen months. Foreign lending, so essential to our export business, was resumed to some extent in the final quarter—though heavy withdrawals from our market of foreign-owned short-term funds. Foreign purchasing power was stimulated, also, by sympathetic liquidation of securities in every important country.

Exports of American manufactured goods reached the huge total of approximately $3,250,000,000, about 9 per cent greater than in 1928, and about 80 per cent more than in 1922. This growth of exports has made possible more continuous employment of American labor and capital. Import trade was also exceptionally large, especially when allowance is made for the recent decline in the prices of certain major important commodities. The huge volume of imports is the result of our high purchasing power and of the increasing productive capacity of many foreign countries.

Although some of our industries lagged behind, there was on the whole, during 1929, less disparity between slow and active branches of business than has been apparent in other recent years.

Broadly speaking, the business history of 1929 recorded the continuation of a movement which has been substantially unbroken for an exceptionally long period. It is impossible, of course, to forecast what temporary ups and downs may occur. But the nature of the economic development of the United States is such that one may confidently predict, for the long run, a continuance of prosperity and progress.

Paper Mills Fight Freight Rates

[FROM OUR REGULAR CORRESPONDENT]

AMSTERDAM, N. Y., December 28, 1929.—The Smeallie & Voorhees Paper Company and other industries here are co-operating with the Chamber of Commerce in fighting the proposed new rates sought by the New York Central Railroad at a hearing which will be held before the Public Service Commission at Albany early in January. It is claimed that raw materials used by the paper and other industries of this city now take a class rate of 56 cents per one hundred pounds and under the proposed rates the cost per hundred pounds would be 74 cents or an increase of 18 cents per hundred. All local industries will be represented at the hearing to enter protests against raising the rates and the Associated Industries of New York State is leading the fight.

The proposed freight rate increases in the class rate case now before the commission ranges from 15 to 32 per cent annually, a comparison with present and proposed rates discloses. The outstanding feature of this proceeding is the extremely high level of class rates recommended by the railroads. The rates proposed are considerably higher than those proposed by the Interstate Commerce Commission's examiner, Mr. Hosmer, who recommended a scale of rates which, if approved, would place upon the shippers in official classification territory an additional transportation burden of at least fifty million dollars, it is claimed. Manufacturers say that on the New York Central traffic alone the increases would be about twenty million dollars a year.

The industries in New York State contend that they are entitled to rates which reflect existing conditions rather than on a scale of rates reflecting conditions found in the mountainous regions of Maryland and West Virginia. The industry of this state are entitled to protection against these increases in freight rates, counsel for the shippers declare. It is understood that the investigation now under way is mainly to iron out the inconsistencies in the rate structure rather than burden the public with an addition to their annual freight bill of fifty million dollars or more and incidentally place at a disadvantage industries whose products move to a large extent on the higher classes.

Contention of special counsel for Associated Industries appearing for the shippers is and has been since the start of the investigation that the railroads of this state do not need the very substantial increases recommended and are not entitled to them under the law; and that their proposal be so modified as to eliminate the inflation from the scale and provide rates for shippers which reflect existing transportation conditions.

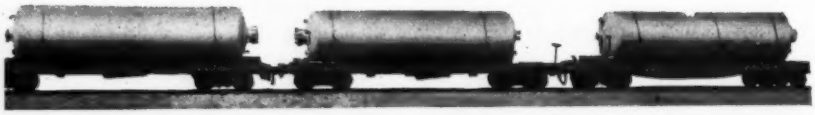
Pulpwood Movement Through Ogdensburg

[FROM OUR REGULAR CORRESPONDENT]

OGDENSBURG, N. Y., December 28, 1929.—Approximately 21,000 cords of pulpwood passed through the terminal here during the past season, according to Superintendent George S. Sears. The shipments were considerably larger than a year ago. It was announced that 14,000 cords still remain at the terminal and will be shipped by rail to the paper mill at Pyrites during the winter.

Kellogg adds to a long record

of exceptional service to the paper industry



KELLOGG products for the paper industry continue to serve the needs for new mill equipment, and for the expansion of present capacities. In the past year a record volume of new business, from present users, reflects exceptional satisfaction and adds an earned prestige to the name of Kellogg.

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

The Vertical Hydrator

In a paper read at Kalamazoo, Mich., on May 17, 1929, P. E. Hodgdon, of the Munising Paper Co., referred to some results obtained in the course of experiments with a new type of vertical beater, made by Love Brothers, of Aurora, Ill. Since then, this new machine, known as the Fritz Hydrator, has been extensively advertised in the trade papers, but no description of it seems to have been published.

Tne owner of the patents of the machine is E. B. Fritz of Chicago, better known to the industry as a publisher than as an inventor. On March 3, 1925, he was granted United States patent 1,528,201 for a machine embodying the general principles herein described, and since then he has taken out patents 1,556,926 and 1,556,927 covering two somewhat different forms of the equipment. It is this last form that was finally selected for putting on the market as the Vertical Hydrator.

Patent No. 1,528,201

The mechanism consists of three main parts, namely, hydrating, separating and mixing tanks (1), a reservoir (6), and a housing (11) containing the beaters (14) and their associated parts.

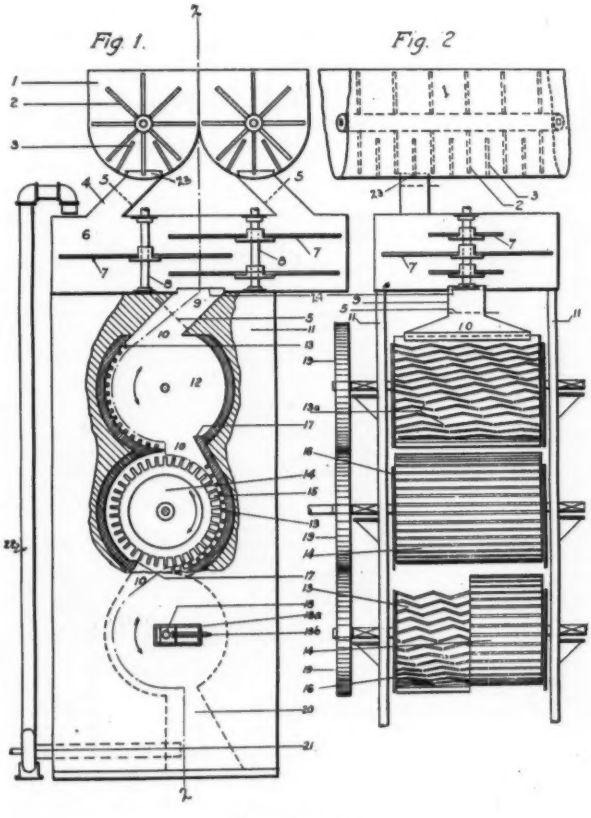
(1) is a tank into which is fed the pulp suspension. Mounted therein is a "flapper" (2) adapted to mix the pulp and bring it into contact with "strippers" (3). A conduit (4) leads from the bottom of tank (1) and opens into a reservoir (6), this conduit (4) being provided with a valve of gate (5) to regulate the flow of pulp. In the reservoir (6) there are one or more agitators (7) on shafts (8) to keep the mass thoroughly agitated. Leading from the reservoir (6) is the conduit (9) with an elongated opening (0). The housing (11) is provided with a series of superposed chambers (12) having similar elongated openings (10) in each to make them communicate with one another. These chambers (12) extend horizontally and are of circular cross section. In each chamber is journalled a rotor (14) (in Figure 1 the upper chamber is shown with the rotor removed). These rotors are preferably driven from the same source of power and are so geared that the rotors adjacent to each other travel in opposite directions and that the speed of each rotor is somewhat greater than that of the one just above it.

On a portion of the inner concave wall of each of the chambers (12) there is a removable plate having on its exposed surface corrugations (13) running lengthwise and preferably in wave formation; the waves in the lower half of each section are broken in their continuity, at the valleys (13a), to prevent any of the pulp from permanently lodging in these valleys. The flanges (16) on the sides of the removable plates act as retaining walls. Spaced longitudinal parallel ridges or bars (15) are provided on the periphery of the rotors.

Fig. 2 shows the bar surface (13) of the concave inserted plate with broken valleys (13a); below it, a rotor bar surface (15); and below that a cut section showing a rotor surface (15) in juxtaposition to a plate surface (13).

At the point where each chamber (12) discharges into the chamber below it, a baffle (17) prevents the mass from traveling upwards with the rotation of the rotors (14). Each rotor journal (18) is horizontally slidable in a bearing (18a) and adjusted by an adjusting screw or mechanism (18b) for the purpose of regulating the clearance between the periphery (15) of the rotor (14) and the corrugations on the plate (13). The direction of rotation of the rotors (14) is indicated by the arrows.

The lowest chamber discharges into a receptacle or tank (20) whence it is removed by the pump (21) and returned through outlet (22) to the reservoir (6) for further beating. In the bottom of tank (1) the outlet (4) is surrounded by a raised portion



FIGS. 1 AND 2

Fig. 1. Elevation, partly broken away. Fig. 2. Section along line 2-2 of Fig. 1.

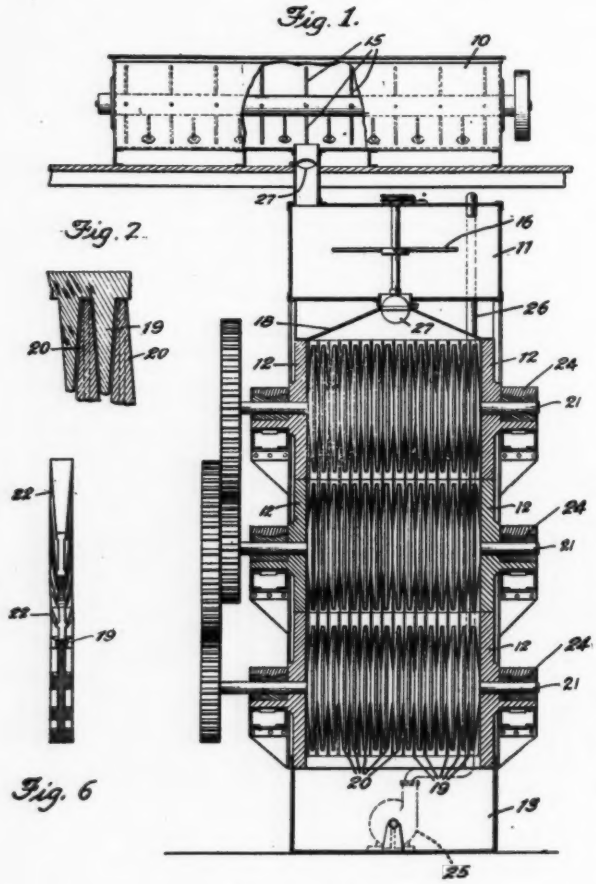
(23), and there is also a similar raised portion (24) in reservoir (6), to prevent any heavy impurities from getting into the chambers (12) and in contact with the rotors (14).

In the operation of the machine the material to be beaten and refined is delivered into the tank (1) where the "flappers" and "strippers" disintegrate the mass and separate out strings and heavy materials such as nails or wire. When the material has entered the reservoir (6) it is kept in suspension by the agitators (7) until it is discharged into the first chamber (12), where it is caught by the rotor (14) and brushed and refined between the surface (13) and (15) and discharged into the next lower chamber where it is further brushed and refined between similar surfaces. Owing to the gradual increase in the speed of the rotors from the top to the bottom of the machine, the material is taken from each rotor (except the lowest one) faster than its normal rate of delivery.

Patent No. 1,556,926

The difference between this machine and the one just described lies in the construction of the rotors and the stationary surfaces with which they co-act.

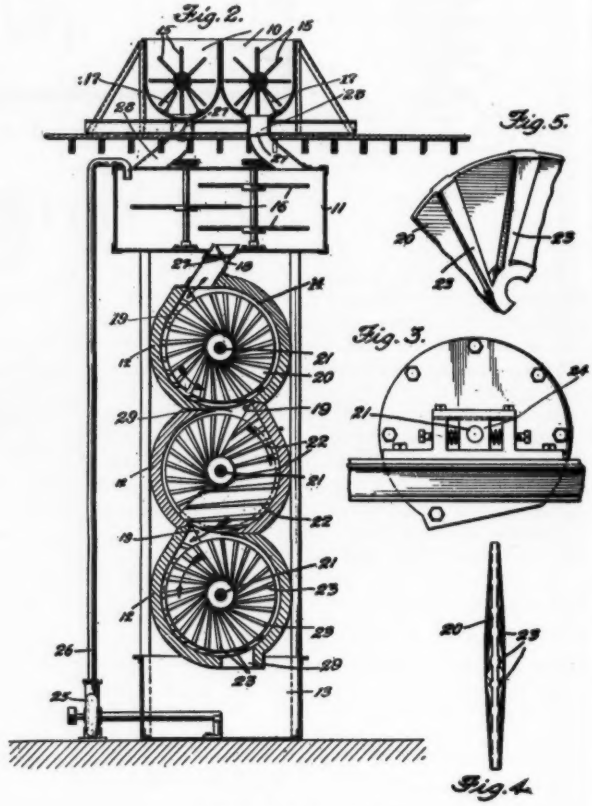
Semi-disks (19) are removably attached to or form a part of the inner wall of each chamber (12); they have corrugations or raised abrading surfaces (22) on either face, and they taper from their outer edge inwardly. The raised abrading surfaces have a downward inclination designed to project the material inward toward the center, and are given a direction such that they never stand parallel to the raised surfaces on the rotors (21).



FIGS. 1, 6 AND 7.

Fig. 1. Elevation, with parts broken and cut away. Fig. 6. Inside edge view of a stationary disk, with a lower portion cross-sectioned. Fig. 7. Diagrammatic view of the position and relation of the rotors and the disks.

The rotors consist of a shaft (21) on which are assembled a large number of circular disks (20) with raised portions (23) which are arranged tangentially to the shaft (21). The reason for this arrangement is twofold: (a) they play the part of paddles in an overshot wheel and tend to assist in driving the rotors by the weight of the stock falling on them, and (b) they



FIGS. 2, 3, 4 AND 5.

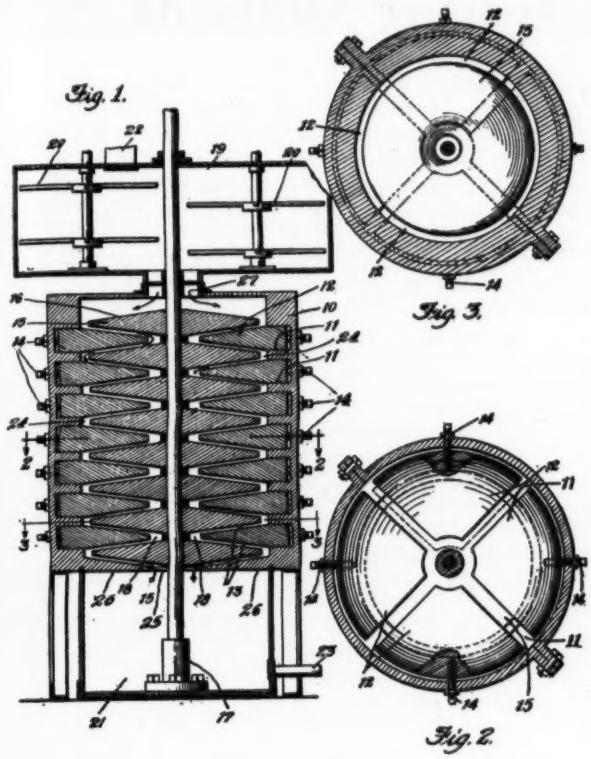
Fig. 2. Section through the center of Fig. 1. Fig. 3. View of the rotor adjustment. Fig. 4. Perspective on edge of a rotor disk. Fig. 5. Enlarged and somewhat exaggerated section of a rotor disk.

tend to throw the material outwardly against the surfaces (22) on the semi-disks (19). In the latter action the stock is swished and brushed back and forth to accomplish more perfect reduction. The disks are assembled to alternate with the semi-disks (19), as shown in Figure 7. The rotors are relatively thick at the centers and taper out to their edges to function in conjunction with the oppositely tapered disks (19). Adjusting means (24) are provided at the bearings of each of the rotors (21) so as to accommodate the various grades of stock and effect various degrees of refining. The direction of rotation is indicated by the arrows.

The raw material delivered into the tank (10) is more or less disintegrated by the strippers and flappers and any heavy impurities fall to the bottom. In practice it is preferable to have at least two such tanks so that while one is being filled the other may be discharged into the reservoir (11) so that the operation of the rotors in beating, brushing and refining may be continuous. The material entering the upper chamber (12) falls upon the rotors and is thrown by them outwardly against the surfaces of the semi-disks, which in turn tend to throw the material back toward the center and downward, the fibres being thereby brushed, hydrated and refined.

Patent No. 1,556,927

In this machine a series of channels (11) are provided in the



FIGS. 1, 2 AND 3.

Fig. 1. Sectional elevation. Fig. 2. Cross section along line 2-2 of Fig. 1. Fig. 3. Cross section along line 3-3 of Fig. 1.

internal wall of the housing (10), and a series of disks (12) are mounted in the channels. At the axis of the housing is a vertical shaft (17) on which are assembled a number of disks (15). The disks (12) are preferably in the form of quarter-sections, the reason for this being three-fold: (a) to permit of moving them outwards or inwards for refining adjustment, (b) for providing a clearance around them, and (c) for convenience in assembling the machinery or in replacing the disks. The disks (12) are thickest at the wall of the housing (10) and taper inwardly, as shown at (13), and adjusting means (14) are provided for advancing them or drawing them back. These disks (12) are spaced apart, with a clearance space at their interior edges.

The disks (15) on the shaft (17) are also spaced apart, the distance between them being equal to that between the disks (12). They are thick at the shaft and taper therefrom outwardly to the edge, as indicated at (16), each taper surface being made to parallel the reversed taper surface of the disks (12) and the two being arranged to intermesh and co-operate. A clearance space (24) is provided between the periphery of the disks (15) and the inner wall of the housing (10), and a clearance (18) is arranged between the inner periphery of the disks (12) and the two being arranged to intermesh and co-operate. A clearance space (24) is provided between the periphery of the disks (15) and the inner wall of the housing (10), and a clearance (18) is arranged between the inner disks (12) and the shaft (17).—A.P.-C.

Goes With Sitka Spruce Pulp & Paper Co.

PORTLAND, Ore., December 28, 1929.—A. C. Silliman, formerly with the Spalding Pulp and Paper Company at Newberg, Ore., is now with the Sitka Spruce Pulp and Paper Company in its new plant at Empire, Ore.

TAPPI Notes

J. P. Hagenauer, formerly with L. V. Estes, Inc., is now with the Marathon Paper Mills, Rothschild, Wis.

W. K. Gaines, who has been studying pulp manufacturing processes at the Kemi mill in Finland, has just returned to the United States.

Sakari Koivulehts, a chemical engineer from Finland, was a recent visitor to the TAPPI office.

Maurice Brot, assistant director of the Grenable, France, School of Paper Making, was a visitor this week at the office of the Technical Association. Dr. Brot has been visiting in Canada.

Mr. and Mrs. Joseph Rossman of Washington, D. C., visited the TAPPI office this week and are spending the holidays in New York and Boston. Mr. Rossman is examiner of paper industry patents at the U. S. Patent Office and has contributed several comprehensive reviews to the Technical Association section of the PAPER TRADE JOURNAL.

Puget Sound Pulp and Timber Co. Joins TAPPI

The most recent addition to the Technical Association's corporate membership is the Puget Sound Pulp and Timber Company of Everett, Wash., of which Ossian Anderson is president. Associated with the new mill now under construction at Everett may be included the mill of the San Juan Pulp Manufacturing Company at Bellingham and the Fidalgo Pulp Manufacturing Company at Anacortes. The Everett mill when completed will manufacture 175 tons of bleached sulphite daily. The pulp will be dried on two Fourdrinier type machines, each 152 inches wide. The product will be in sheet form and baled in hydraulic presses. The completed mill cost about three and one-half million dollars and will begin operations in 1930. Mr. Ossian Anderson will represent the company in the Technical Association of the Pulp and Paper Industry.

Moisture Content of Felt Rags

The Bureau of Standards, Washington, D. C., in cooperation with the Technical Committee of the Felt Manufacturers Association obtained the moisture content of the various grades of rags such as used in the manufacture of roofing felts. Two members of the committee assisted in obtaining the test data. The moisture in 50 samples was determined at a constant temperature of 70° F and at relative humidities of 50, 65, and 90 per cent. The data will be used by the committee in reference to moisture-content bases for purchase specifications. Particular attention was given to the control of the humidity conditions. Two different air-conditioned rooms were used for the tests and the humidity in both the rooms did not vary more than plus or minus one from the required humidity.

Absorbency of Paper Towels

In view of the more or less rapid loss of absorbency found in some paper towels, an investigation has been initiated at the Bureau of Standards, Washington, D. C., to find if possible the cause of this form of deterioration and means of predicting the rate of loss. Representative samples of the various kinds of towels are being secured for test purposes. These will be tested at regular intervals and the results of natural aging will be compared with those obtained by accelerated aging.

F. C. Clark Returns to America

Frederick C. Clark, pulp and paper consulting engineer of South Manchester, Conn., has just returned from Europe on the *Olympic* after a two months' trip through France, Germany, Belgium and England. The purpose of this trip was to investigate a new pulp and paper making process for a large manufacturing interest here. A number of pulp and paper manufacturing plants were visited to study their manufacturing methods.

Proposed Official Testing Methods

Determination of Fiber Composition of Paper

I. Apparatus

1. Microscope. A microscope capable of giving not less than 100 diameters magnification is necessary for the determination of fiber composition. It is desirable that the microscope be of the compound type and that it be equipped with a mechanical stage.

2. Cross Line Disk. This disk is employed to establish a dot or point for counting the fibers passing under it. The disk may be obtained in two ways:

(a) It is possible to construct a satisfactory cross line disk by the use of two silk fibers, approximately 0.01 mm. in. diameter obtained by untwisting silk thread. The fibers are drawn across the center of a round cover glass 18 mm. in diameter at right angles to each other. They are cemented to the edges of the glass with paraffin or other adhesive and the protruding ends cut off. The cover glass is then placed, with the fibers on the under side, on the diaphragm of the microscope eye-piece. The cover glass is then centered on the diaphragm of the eye-piece of the microscope and cemented in this position with a drop of paraffin.

(b) A graticule or cross line disk is carried in stock by many manufacturers of optical equipment. It consists of a round thick disk of optical glass on which are engraved two lines at right angles to each other, both lines running completely across the disk and intersecting at the center.

3. Dropper. This shall consist of a glass tube six inches (20 cm.) long and ¼ inch (6 mm.) internal diameter fitted at one end with a rubber bulb and having the other end carefully smoothed but not constricted.

II. Specimen

1. Composition. The specimen for test shall consist of pieces having a total area of not less than 6 square centimeters (1 square inch) cut from different portions of the test sample, so as to be representative of it.

2. Preparation for Examination. Place the specimen in a small beaker and completely cover it with a 0.5 per cent caustic soda or caustic potash solution, heat to boiling, transfer the contents of the beaker to a small 200 mesh metal sieve and wash thoroughly with water. Roll the moist pieces of paper into a ball and work between the fingers to loosen the fibers. Transfer to a test tube and shake until the fibers are completely separated. Pour a portion of the mixture into a second test tube and dilute to a fiber concentration of about 0.1 per cent. Transfer the fibers to a microscope slide by means of a dropper consisting of a glass tube 20 cm. (6 inches) long and 6 mm. (¼ inch) internal diameter, fitted at one end with a rubber bulb. Thoroughly mix the fibers and water, quickly insert the dropper into the mixture 5 cm. (2 inches) below the surface, expel two bubbles of air from the dropper, then fill the tube to a distance of about 13 mm. (½ inch). Transfer the contents of the dropper to the slide, making 4 drops, completely emptying it.[1] Repeat this procedure until the slide is uniformly covered with drops of the mixture, then place the slide in an air bath until dry. Add stain as specified in Section III—2 to the dried fibers and press down on them a second slide or large cover glass. Remove excess moisture from the edges of the slides with absorbent paper. Prepare three slides in this manner.

III. Procedure

1. Method of Observation.[2] The prepared slides shall be examined microscopically, using a magnification of not less than 100 diameters. Place the stained slide on the mechanical stage of the microscope, and count the fibers at various points in a straight line twice lengthwise and four times crosswise of the slide, starting each line of observation at a different point. The number of each kind of fiber present in at least 25 different fields and a total of not less than 600 fibers, 200 on each slide, shall be counted.

Either of the two following methods shall be used to compensate for the difference in size of fibers:

A. Use the diameter of the field as observed through the microscope as the unit of measure, and give each fiber counted a value proportionate to this unit.

B. The following method is designed to eliminate the undesirable personal equation in the estimation of relative sizes of fibers involved in method (a). Place a cross line disk on the diaphragm of the eye-piece of the microscope. As each fiber passes under the dot or point formed by the intersecting lines on the disk, count it as one regardless of its size. If aggregations of fibers such as occur in ground wood are encountered the number of single fibers in the aggregation shall be estimated and counted as if the fibers were completely separated.

2. Stains. For all purposes except as specified below, either the Herzberg or the Sutermeister stain shall be used. These shall be prepared and used as follows:

Herzberg.[3] Prepare the following solutions:

(A) An aqueous solution of C. P. zinc chloride saturated at 70 degrees F.

(B) 0.25 g. of C. P. iodine and 5.25 g. C. P. potassium iodide dissolved in 12.5 cc. of distilled water. Mix 25 cc. of solution "A" measured at 70 degrees F. with solution (B). Pour into a narrow cylinder and allow to stand until clear. Decant the supernatant liquid into an amber colored glass-stoppered bottle and add a small piece of iodine to the solution. Thoroughly moisten the fibers with this solution and remove the excess with blotting paper. The solution should be tested with known fibers and readjusted if necessary by addition of either zinc chloride or iodine. The following colors are developed by this stain:

Red—Linen, cotton, bleached manila hemp.

Blue—Chemically prepared fibers low in lignocellulose, from wood, straw and esparto.

Yellow—Fibers high in lignocellulose such as ground wood, jute and unbleached manila hemp.

Sutermeister[4]—Prepare the following solutions:

Solution (A)—1.3 g. iodine and 1.8 g. potassium iodide dissolved in 100 cc. of water.

Solution (B)—A clear, practically saturated solution of calcium chloride.

In using this stain, apply solution (A) after moistening the fibers with water, allow to remain about 1 minute, remove the excess by blotting and then add solution (B).

The colors developed by the Sutermeister stain are, in general:

Red or brownish red—Cotton, linen, hemp ramie.

Dark Blue—Bleached soda pulps from deciduous woods.

Bluish or reddish violet—Bleached sulphite fibers and thoroughly cooked unbleached sulphite fibers.

Greenish—Jute manila hemp and the more lignified fibers in unbleached sulphite.

Yellow—Ground wood.

Lofton-Merritt[5]—This stain shall be used for differentiating between unbleached sulphate (kraft) and unbleached sulphite fibers. It shall be prepared as follows:

(A) Malachite green, 2 g. water 100 cc.

(B) Basic fuchsine 1 g. water 100 cc.

These shall be mixed in the proportion of 1 part (A) to 2 parts (B). As dyes from different sources vary it is necessary to test them by staining known fibers. Unbleached sulphate fibers are stained blue or blue-green and unbleached sulphite fibers purple or lavender. If any purple fibers appear in unbleached sulphate

fibers, this indicates there is too much fuchsine present and more malachite green solution must be added. The opposite is indicated if some unbleached sulphite fibers develop a green or blue color.

The Lofton-Merritt stain shall be used as follows: Add the compound stain to the fibers and allow to remain two minutes. Remove excess stain by means of a hard filter paper and add a few drops of 0.1 per cent hydrochloric acid. After about 30 seconds remove the excess acid. Next add a few drops of distilled water and remove the excess.

Bright Stain[6]—This stain shall be used for differentiating between bleached and unbleached fibers. The solutions required are:

(A) 2.7 g. ferric chloride ($FeCl_3$ $6H_2O$) per 100 cc. distilled water.

(B) 3.29 g. potassium ferricyanide ($K_3Fe(CN)_6$) per 100 cc. distilled water.

(C) 3 g. of crude (not treated with sodium carbonate) substantive red dye per 500 cc. of distilled water. The dye used shall be Dupont Purpurine 4 B. Concentrated, or its equivalent. These solutions must all be made with cold water.

Filter solutions (A) and (B) and keep in separate stock bottles at a temperature not exceeding 20 degrees C. Make solution (C) fresh each day it is used. For staining use tall narrow beakers, suspending the microscope slides in the beakers from clamps. Mix 10 cc. each of solutions (A) and (B) in one beaker and add an equivalent amount of solution (C) to another beaker. Set the beakers in a water bath, the temperature of which must be maintained constantly within ± 1 degree of 20 degrees C. Place a thermometer in the stains. When their temperature is 20 degrees C. dip the slide containing the dry fibers in distilled water to moisten it uniformly (so that no air bubbles will be formed when it is stained), then place the slide in stain (A-B) and allow it to remain 20 minutes. Wash by dipping in distilled water 6 times, then renew the water and repeat the washing process. Dry the contents of the slide and repeat the processes of moistening, staining, washing and drying, using the (C) stain. It is desirable to fix the top glass on the fibers with a drop of balsam.

The colors developed by the Bright stain are:

Red—Bleached fibers or fibers practically free from lignocellulose.

Blue—Unbleached fibers or fibers containing lignocellulose.

IV. Report

The proportion of the various fibers found shall be reported in terms of percentages of the total fiber composition, to the nearest 5 per cent. The following nomenclature which covers the fibers commonly dealt with shall be used in reporting results. Chemical wood fiber; chemical deciduous wood fiber; chemical coniferous wood fibers; ground wood fiber; manila fiber; jute fiber; rag fiber; linen fiber; cotton fiber; esparto fiber; straw fiber.

V. Additional Information

[1] Microscopic Paper Fiber Analysis, G. K. Spence and J. M. Krauss, Paper, Volume XX, No. 11, p. 11, May 23, 1917.

[2] Suggested by H. T. Case, Sears Roebuck & Co.

[3] Papier Prufung, Wilhelm Herzberg.

[4] Chemistry of Pulp and Paper Making. E. Sutermeister, p. 390 (obtainable through TAPPI—$6.50).

[5] Method for Differentiating and Estimating Unbleached Sulphite and Sulphate Pulps in Paper. R. E. Lofton and M. F. Merritt, Technologic Paper No. 189, U. S. Bureau of Standards.

[6] Microscopy of Paper Fiber, C. G. Bright, Paper, Volume XX, No. 25, p. 11, August 29, 1917. As modified by the author.

[7] Report of Sub-committee on Microscopical Testing, C. E. Libby, Technical Association Papers, May, 1929.

Quantitative Determination of Paraffin in Paper

I. Apparatus

A reflux condenser is necessary for this test. The balance used for weighing shall be sensitive to 1 mg.

II. Specimen

The test specimen shall consist of not less than 5 grams of air dry paper obtained by cutting small strips from different portions of the test sample in such a way as to be representative of it. The strips shall be cut into small pieces about 6 mm. (0.25 inches) square. It is recommended that the test specimen be ground or shredded.

III. Procedure

Completely extract the paraffin from the paper with chemically pure carbon tetrachloride, in the extraction apparatus. Evaporate the extract to dryness, add 25 cc. of 0.5 N alcoholic potash, and again evaporate to dryness. Take up the dry residue with ether and water, and transfer to a separatory funnel. The volume of ether in the funnel should be 25 cc. and that of the water, 150 cc. The water should contain a small amount of sodium chloride to prevent emulsification. Shake the contests of the flask thoroughly, allow separation to take place, and draw off the water into a second separatory funnel. Repeat the treatment, one or more times as may be found necessary, with a fresh 25 cc. portion of ether. Combine the ether extracts, and wash with fresh 100 cc. portions of water until the separated liquids are perfectly clear. An addition of a strong solution of sodium chloride to the ether extract may be necessary to thoroughly clarify it. Transfer the ether extract to a weighed evaporating dish, evaporate to dryness, dry for exactly one hour at 100 degrees C. and weigh the dried residue to an accuracy of 0.1 mg. Not less than two determinations shall be made and the average of the results shall be computed. The percentage results of duplicate determinations of paraffin shall agree within 0.2.

IV. Report

The paraffin content shall be expressed as a percentage of the air dry paper to the nearest 0.1 per cent.

Quantitative Determination of Starch in Paper

I. Apparatus

A reflux condenser is necessary for this test. The balance used for weighing shall be sensitive to 1 mg.

II. Reagents

1. For use of Fehling's solution:

1. For use of Fehling's solution:

A. Copper Sulphate (Fehling's Solution A)—To 4 liters of distilled water add 277.3 grams of crystallized copper sulphate ($CuSO_4 5H_2O$), and shake the mixture at intervals until the copper sulphate has gone into solution. The copper sulphate should be of high purity and as free from iron as possible.

B. Alkaline Tartrate (Fehling's Solution B)—Dissolve 150 grams of sodium hydroxide of good quality and 500 grams of potassium sodium tartrate in 1500 cc. of distilled water.

C. Mixed Fehling's Solution—Fehling's solution is prepared by careful addition of the copper sulphate solution A to an equal amount of the alkaline tartrate solution B. It may be kept ready mixed but should in this case be carefully protected from light and air; it is, however, preferable to keep the solutions separate until they are needed.

D. Molybdophosphoric Solution—Dissolve 100 grams of sodium molybdate (43 per cent Mo) and 75 cc. of syrupy phosphoric acid (85 per cent) in a solution containing 275 cc. of concentrated sulphuric acid and 1750 cc. of distilled water.

E. Potassium Permanganate Solution—Prepare a N/30 solution of permanganate by dissolving 1.10 grams of $KMnO_4$ in distilled water and making up to 1 liter. Standardize against sodium oxalate.

2. For use of Benedict's solution:

The directions for preparing this solution are described by Joslin (Diabetic Manual Paper 197) as follows:

Copper sulphate CP	14.20 grams
Anhydrous sodium carbonate	100.00 grams
Sodium citrate ($5\frac{1}{2}H_2O$)	200.00 grams
Potassium sulphocyanate	125.00 grams
5 per cent Potassium ferrocyanide	10.00 cc.
Distilled water to make a value of	1000 cc.

With the aid of heat dissolve the carbonate, citrate and potassium sulphocyanate in enough water to make about 800 cc. of the mixture. Dissolve the copper sulphate (which has been accurately weighed) separately in about 100 cc. of water and pour the solution into the other liquid with constant stirring. Add the ferrocyanide solution, cool and dilute to exactly 1 liter; only the copper sulphate need be weighed with exactness.

III. Specimen

The specimen shall consist of not less than 5 grams of bone dry paper obtained by cutting small strips from different portions of the test sample in such a way as to be representative of it. The strips shall be cut into small pieces about 6 mm. (0.25 inch) square.

IV. Procedure

Place the weighed specimen of paper in a 500 cc. round bottom flask, add 200 cc. of water and 5 cc. of glacial acetic acid. Connect the flask to a reflux condenser and boil the contents vigorously for one hour and a half. Pour the contents of the flask through a Buchner funnel and wash the pulp on the plate with 50 cc. of hot water, using suction. Add 15 cc. of 37 per cent hydrochloric acid to the filtrate and boil under reflux for thirty minutes. Neutralize the hot solution with solid sodium carbonate until effervescence ceases. Cool to room temperature and adjust to 500 cc. in a volumetric flask. The starch in the hydrolized starch solution shall be determined with either the Fehling's solution or with the Benedict's solution. The procedure for each of these solutions follows:

1. Procedure with Fehling's Solution:

Draw off 100 cc. of this hydrolized starch solution by means of a pipette into a 400 cc. beaker. Add 25 cc. of Fehling's solution and boil for 10-15 minutes. Filter through a small Buchner funnel containing an asbestos mat. Wash the cuprous oxide with 200 cc. of hot water. Transfer the cuprous oxide with the asbestos mat back to the original beaker and add 25 cc. of the molybdophosphoric solution. Add 25 cc. of water and filter off the asbestos through the same Buchner funnel. Wash the mat with 200 cc. of cold water, removing every trace of blue color. Titrate the filtrate with N/30 permanganate solution. Titrate to a faint pink after the blue color has been discharged.

1 cc. of N/30 $KMnO_4$ = 0.0011 gram starch

2. Procedure with Benedict's Solution:

To approximately 10 grams of sodium carbonate in a 150 cc. beaker, add 20 cc. of distilled water and 5 cc. of Benedict's solution. Heat to boiling and add the hydrolized starch solution in small portions. Keep the Benedict's solution boiling and maintain its volume at about 25 cc. The end point is when the Benedict's solution changes to colorless.

1 cc. Benedict's solution = 0.002 gram starch

As the factor for starch varies with different kinds and grades of starch, when the starch used in the paper is available, its exact factor can be determined by the following procedure:

Dry the starch at 100 degrees C. (212 degrees F.) for 3 hours. Weigh 0.05 gram and boil with approximately 190 cc. of a 4 per cent hydrochloric acid solution for 30 minutes. Neutralize with sodium carbonate, cool, adjust to a definite volume, and titrate with either of the solutions as described. When it is desired to express the content of starch on an air dry basis and the actual initial moisture content of the starch is not known, the average moisture figure of 12 per cent may be used in the conversion calculation.

V. Report

The amount of starch shall be reported as a percentage of the bone dry paper to the nearest 0.01 per cent.

VI. Additional Information

This method is based on that of V. Voorhees and O. Kamm, Paper, Volume 24, folio page 1091 (August 27, 1919). The method proposed by them was revised in respect to the Fehling solution (suggested by Miss H. U. Kiely) and the Benedict solution, (suggested by G. P. Genberg) to avoid use of indicators and to obtain a sharper end point.

Paper Testing Methods Ballot

In this issue proposed official paper testing methods of the Technical Association of the Pulp and Paper Industry are published for (1) fiber composition of paper (2) quantitative determination of starch in paper and (3) quantitative determination of paraffin.

Recently ballots were sent to all members to vote on these three methods but many members did not receive complete copies of the proposed testing methods. The revised methods contain several refinements of the methods described in the bound volume of Paper Testing Methods. These must have the approval of the majority of the members before they can be officially adopted. Any member who has not voted and has lost his ballot may write to the Secretary of the Technical Association, 18 East 41 street, New York, and indicate whether or not he approves the three methods. In the event that the vote is negative the reasons for such a decision should be given so that they may receive the consideration of the Paper Testing Committee.

Recent Developments In Stoker Design *

By H. D. Savage[1]

In this paper recent developments in stokers are discussed. The presentation covers all stokers manufactured by the firms who are members of the Stoker Manufacturers' Association. Stokers for the larger size of steam-power boilers have undergone a different development from the smaller stokers. There has been a distinct advance in size of stokers, in practical combustion rates, and in the convenient arrangement of stokers in general. The problem of preheated air, and the development of small stokers, for domestic and individual uses are also presented.

Each manufacturer of stokers has made improvements according to his conception of the art of stoker firing and the requirements of the market. Research and test work has been undertaken in diligent effort to improve not only the design of stokers themselves, but also the conditions under which they will render the most satisfactory service. In addition to this work on stokers themselves, the problems of furnace design have been the subject of an immense amount of study by stoker engineers.

General Development

The development of stokers has taken place along two radically different lines, in each case synchronizing with a positive commercial demand. Stokers adaptable to large steam-generating units have developed principally along the line of size; those of small boilers principally along the line of convenience.

All are aware of the well-defined trend toward steam-generating

* Presented at the Third National Fuels Meeting at Philadelphia, Pa., October 7 to 10, 1929, of The American Society of Mechanical Engineers.
Note: Statements and opinions advanced in papers are to be understood as individual expressions of their authors, and not those of the Society.

[1] President, Combustion Engineering Corporation.

units of larger and larger size. It has been found economical to build steam-turbine generators in sizes of 150,000 kw. and 200,000 kw. The same factors of economy are responsible for a demand for steam-generating units, ranging in their larger sizes from 500,000 to 1,000,000 pounds of steam per hour.

Pulverized Fuel Popular

Pulverized-fuel firing has proved somewhat more popular for the bulk of these very large modern steam-generating units. It has been comparatively easy to expand the combustion principles, and multiply the mechanical apparatus of pulverized-fuel systems. Mechanical stokers have also been increasing rapidly in size, and it is quite certain that during their recent growth no obstacle so far encountered has indicated any specific limitation, either mechanical or economical.

This growth in the size of stokers is perhaps more remarkable when the mechanical difficulties that confront the designer are fully comprehended. In either the multiple-retort or the chain-grate stoker, a material increase in size may render its former structural formation entirely impractical. The larger stokers may require almost 100 per cent new design in order to secure the necessary strength of structure, resistance to heat, and the feeding and distributing of the fuel and air.

Both Join in Responsibility

An interesting feature of this development work in large stokers is the fact that both stoker manufacturer and customer join in the responsibilities that are involved. Models are out of the question, and a newly designed larger stoker must make good as a practical operating machine, and must meet its predicted performance tests in the customer's plant, without the benefit of preliminary trial installation.

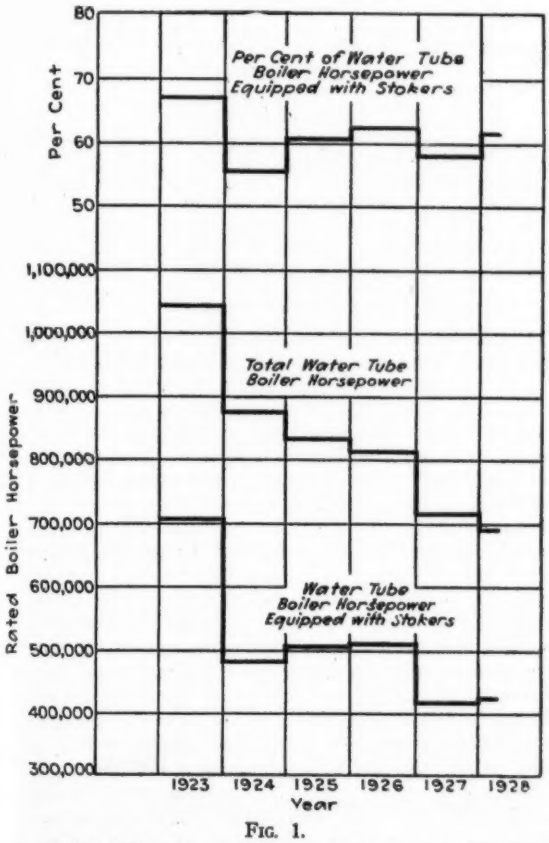


FIG. 1.

Chart showing department of commerce figures on total horsepower of water-tube boilers, water-tube boilers stokered each year and percentage of total horsepower of boilers represented by the horsepower stokered.

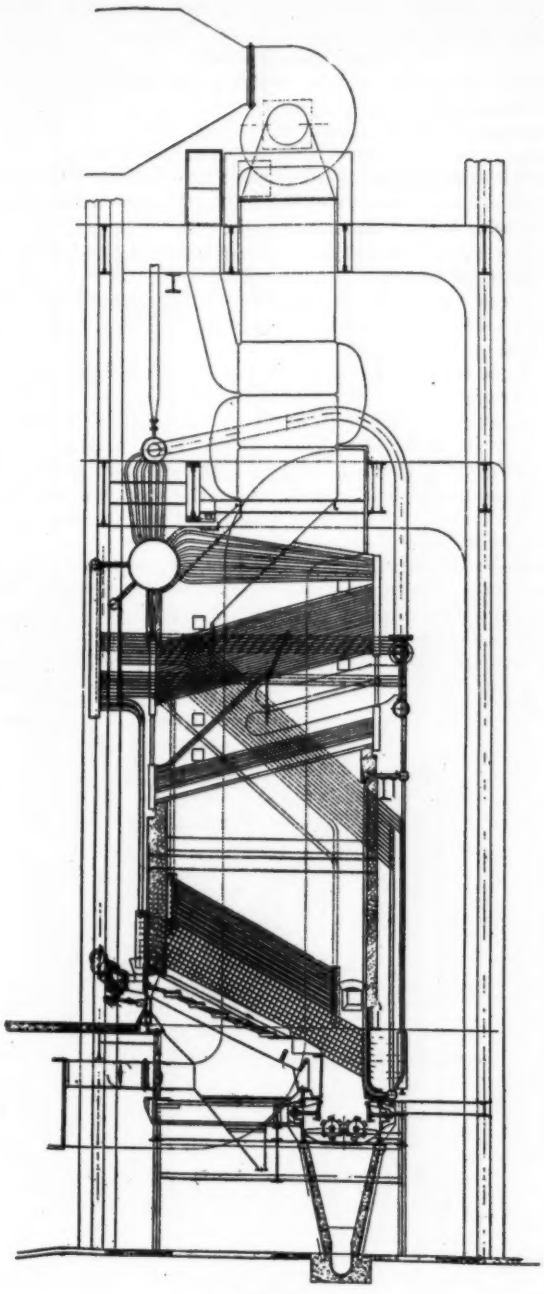


FIG. 2.

Taylor multiple-retort stoker installed at the Westkraft plant in Berlin under 2580 hp. Borsig boilers—stokers are 20 retorts wide, 49 tuyeres in length, have a projected area of 713 sq. ft. each, and are designed for 500 deg. Farh. air temperature.

The fact that such stokers practically always equal or better the expectations of their sponsors is a splendid tribute to the accurate knowledge of the art of combustion shared in general by both stoker and power-plant engineers. There is, furthermore, a certain elasticity in the underlying principles of stoker firing which accounts for the success attained by various stoker manufacturers in working out their particular development programs along lines

which are not always parallel, but along which each manufacturer attains a definite measure of success.

Development of Size

From a production of, say, 100,000 pounds of steam per hr., stoker installations have gradually increased in size till today the production of 400,000 pounds per hr. is both feasible and economical. For one installation 500,000 pounds of steam per hr. is expected. The projected areas of stokers required for such steam production are of the order of 700 sq. ft., and a number have been or are being built of approximately this size.

In the multiple-retort type, single-end stokers ranging up to 713 sq. ft. of projected area and double-end stokers up to 716 sq. ft. have been or are being built. A steam production of the order of 400,000 to 500,000 pounds is contemplated from these installations.

The chain-grate type of stoker has developed from the 420 sq. ft. of grate surface, furnished at Crawford Avenue some years ago by several manufacturers, to 528 sq. ft. in one installation and 684 sq. ft. in another, both in the United States, with 700 sq. ft. the maximum in England. The contemplated steam production with these stokers is appreciably lower than with the multiple-retort underfeeds, due chiefly to the application of the chain-grate stokers to the burning of low-grade fuels.

Considerably large stokers can be built, and modern high-combustion rates can be consistently maintained upon them. The principles of construction now used in the larger stokers are directly applicable to the structure required for much larger sizes. High average combustion rates are a product of operating skill and refinement in stoker and furnace details; the problem here

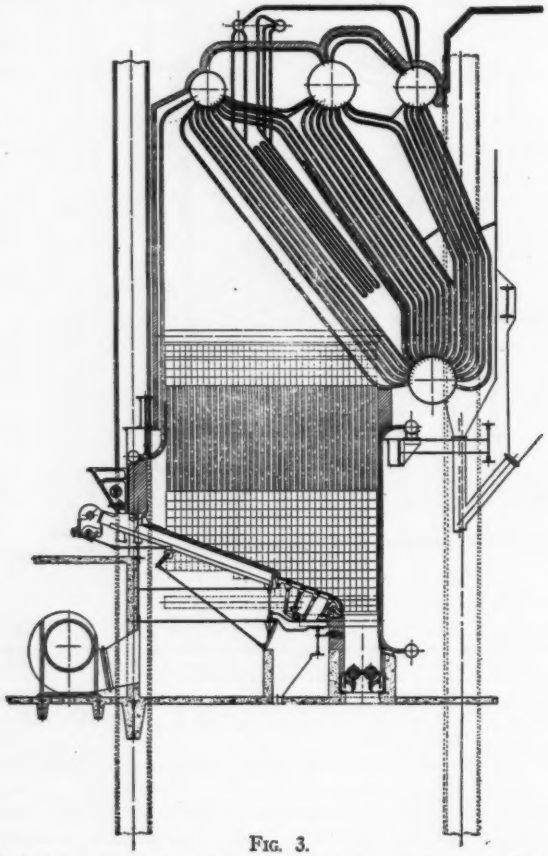


FIG. 3.

Westinghouse multiple-retort stoker for Reed Station of Duquesne Light Co., Pittsburgh, under 3180 hp. boiler—stokers are 18 retrots wide, 33 tuyeres long, with link grates at the lower end of retorts making a length equivalent to 45 tuyeres

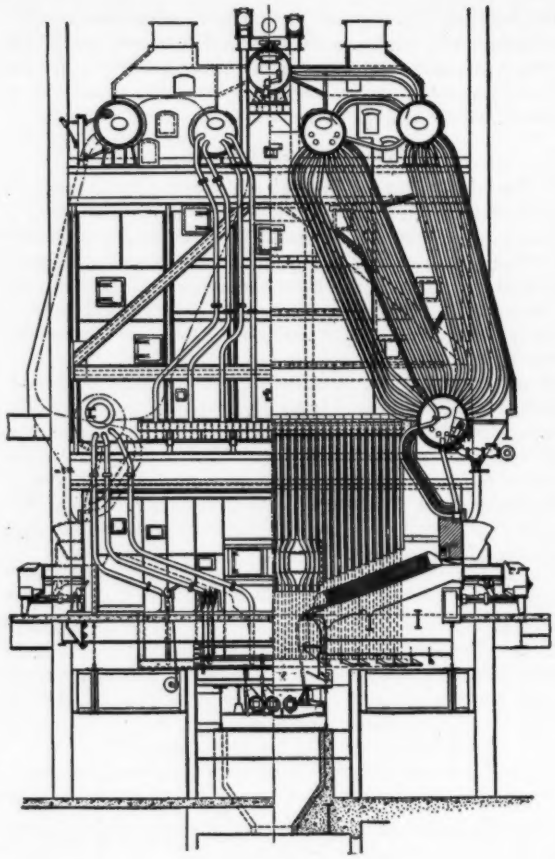


FIG. 4.

Combustion Engineering Corp. multiple-retort stoker for Allegheny County Steam Heating Co. at Pittsburgh under 3670 hp. boiler—this stoker is 14 retorts wide, and measures 27 ft. 7 in. front wall to front wall, giving a projected area for the double stoker of 716 sq. ft.—the unit is designed for 400,000 lb. steam per hour.

with respect to still larger stokers is but the carrying on of the best practice now in effect.

Combustion Rates

It is difficult to make any compilation that will evidence an increase in combustion rates. It may be perfectly true and somewhat obvious that combustion rates have been and are gradually increasing. Various comparatively old records of 70 to 75 lb. of coal per sq. ft. of stoker area per hr. would seem to rob any recent achievements in this line of all claim to recent development. The more prosaic figures of maximum operation under ordinary plant operating conditions would be much more important, but they are somewhat too elusive for accurate compiling.

There is, however, improvement to report along this line which will have to be recognized, if not quantitative value. The problem of increasing combustion rates for regular operation involves pretty much all of the related functions of a stoker. Particularly must the feeding and distributing of the fuel be worked out so as to handle correctly the larger quantities of fuel per square foot, and to secure its economical combustion. Air distribution, speed of stoker mechanism, and fire thickness are factors of this problem which do not offer much difficulty. Ash elimination is a serious problem only in the case of coals having a low fusion ash, or extraordinary clinkering tendency. Furnace design is of extreme importance, and its problem with respect to high-combustion rates has been solved successfully by the work of stoker engineers in combination with the manufacturers of water-cooled walls and air-

cooled refractory walls. This subject, however, is not regarded as within the scope of this paper.

Various stoker manufacturers have attacked the problem of development individually, as they visioned the requirements. This has led to a different stressing of the fundamental details in the various cases. In each case, the manufacturer has achieved some material measure of success, and in the large sense of a craft report, the total of these improvements and developments is along the line of higher consistent combustion rates for stokers.

In multiple-retort underfeed stokers, one manufacturer has developed particularly the length of retort, together with special control of secondary rams; the object being to secure high combustion rates for his large-size stokers. Another manufacturer has developed a deep ram and deep retort, and also special functioning of secondary rams; the object being practically the same, although the method is different. Still a third manufacturer has centered his development particularly on the overfeed section of this type of stoker, enlarging and articulating it according to his view of the requirements of proper combustion, and this also is a still different method of attacking the common problem. In these three developments the object is to provide for practical handling of the fuel as a fire, over greater distances from the point of feeding than formerly. The problem has been difficult and very serious, but by no means insurmountable, and in each case a certain measure of success has resulted.

For the chain-grate type of stoker, higher combustion rates have been largely the result of improved furnace design. The various modifications of the rear arch have lifted the old 45 pound per sq. ft. rate up to the present 60 pound rate. Of course, there are instances of higher rates. Special high rates are not to be emphasized, but the gradually increased rate of coal burning in every-day practice should be.

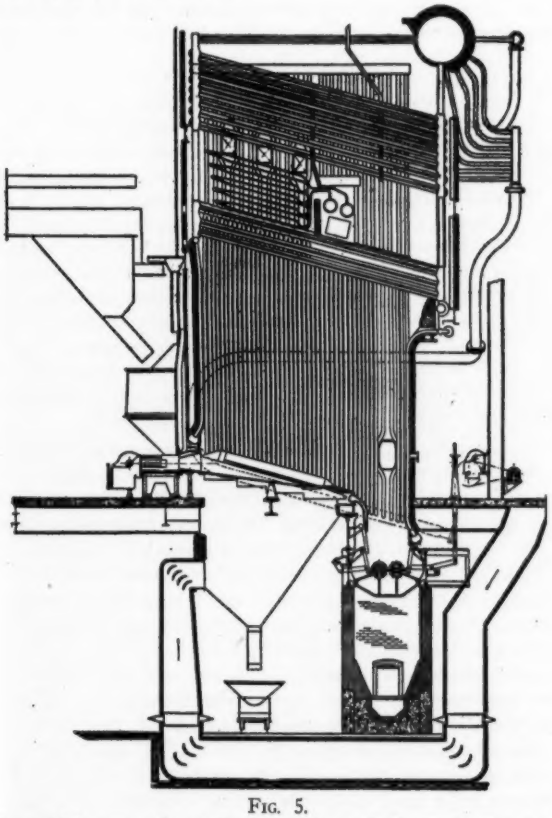


FIG. 5.

Riley multiple-retort stoker at Kearney Station of Public Service Electric and Gas Co. under 2360 hp. boiler—the stoker is 15 retorts wide and has 479 sq. ft. area.

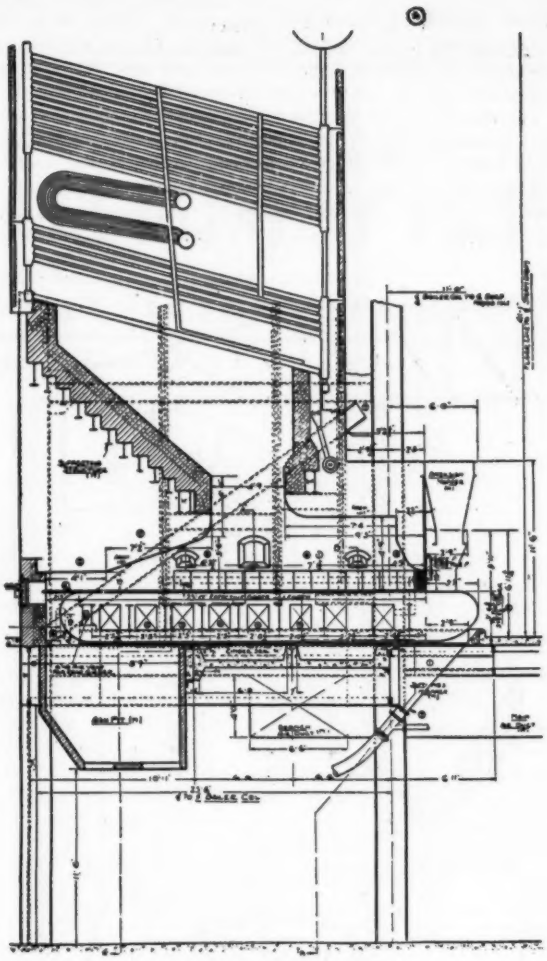


FIG. 6.

Harrington stoker for Anthracite Coal at Hunlock Creek Station of Luzerne County Gas & Electric Co.—this stoker is 21 ft. wide by 23 ft. long, having 483 sq. ft. of stoker area.

Along with improved furnace design, there has been an increase in speed-of-grate travel. For bituminous coals the grate speed has increased from an old limit of about 30 ft. per hr. to a present-day usage of about 60 ft. per hr. For anthracite coal the older limit of about 45 ft. has been superseded by present maximum speeds of about 100 ft. per hr.

The development in higher combustion rates has always been gradual. For all the various fuels, and with all the various stokers, there has usually been a pioneer installation that demonstrated some principal point of improvement. This point has then been tried out and varied in other subsequent installations, with the result that its advantages have been gradually but thoroughly worked into the whole practice of the art. In time the discoveries and improvements, whether originating in operating skill or vision of stoker owners, or finding their inception within the organization of any particular manufacturer, are absorbed and distributed widely throughout the whole field of combustion of fuel on stokers. This, while far from specific, and incapable of mathematical precision of expression, does constitute a real and practical advance in the art.

Preheated Air

Preheated air has caused all stoker manufacturers to build stoker bodies, and all parts in contact with the preheated air, so as to ade-

quately provide for structural expansion. There is a trend toward making the air openings through the various kinds of grate surface in the different types of stokers generally larger for preheated air than for air at normal room temperature.

The allowable limit of preheated temperature of air to stoker fires depends partly on the characteristics of the fuel. Certain coals with preheated air have a tendency to fuse or mat over, thus becoming almost impervious to commercial forced-draft air pressures. In certain cases, 300 deg. F. has been found to be a limit on this score.

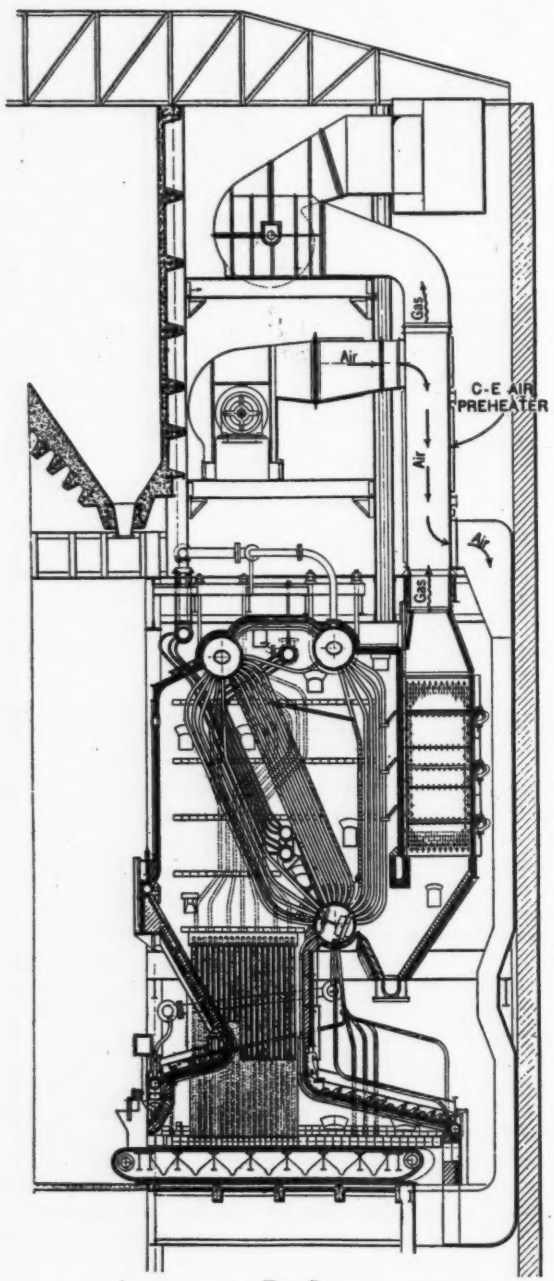


FIG. 7.

Combustion Engineering Corp. stoker for Midwest Bituminous coal at Grand Avenue Station of Kansas City Power and Light Co. under 1516 hp. 700-lb. pressure boiler—the stoker is 24 ft. wide by 22 ft. long, having 528 sq. ft. of stoker area.

A temperature of 350 deg. F. for preheated air with stokers seems to be regarded as safe both by stoker manufacturers and the public which they serve. There is a divided opinion as to the practical effect on stokers of air at higher temperatures. The burden of objection to higher temperatures is on the score of excessive maintenance of grate-surface elements.

Small Stokers

The single-retort stokers, usually considered for boilers of from 200 to 600 hp. in size, have, as a class, developed recently only with respect to convenience in the arrangements for feeding coal and supplying air. The interiors of these stokers have undergone practically no change. But a rather definite demand for electric drive and self-contained source of air supply has caused the development of compact combinations of geared drive and fan worked out for simultaneous driving from a single motor.

In still smaller sizes a large market has recently opened up for stokers to fit under small heating boilers. Practically all of these machines use the combination of speed-reduction gear for coal feeding, together with a small fan for forced-draft air, both driven from a common motor. In fact the development of this style of combined-fuel feeding and source of forced-draft air in these very small stokers has set the style for this arrangement with the small stokers for power boilers.

The stokers for heating boilers are almost all of the screw-feed type, where the coal is fed from the bottom of a hopper, through a delivery pipe, into the bottom of a retort, by means of a slowly revolving screw. Single-retort stokers for small-power boilers are usually larger in size, and utilize rams for feeding the fuel from hopper to retort.

As a class, the heating-boiler stokers do not provide any agitation of the fire, whereas the small-power boiler stokers have means for agitation in order to break down the coke masses, and in this point they resemble the action of the large multiple-retort stokers.

The Field for Stokers

A study of the statistics compiled by the Department of Commerce has yielded information that indicates the continued popularity of the stoker as a means for burning fuel under steam-power boilers. These statistics include a summary of the horse-power of water-tube boilers sold each year in the United States, and it may be assumed without serious error that the horsepower of water-tube boilers represents the potential market for all methods of firing steam-power boilers. This set of figures dates from 1919.

There are also further figures for the number of stokers purchased each year, and these are divided into totals for fire-tube and for water-tube boilers. In addition, the horsepower of boilers fitted with stokers is given. These figures date from 1923, and while not entirely inclusive will serve with sufficient exactness to indicate the trend of stokering in the power-boiler field.

The horsepower of water-tube boilers that are stokered compared to the total horsepower of water-tube boilers sold yields a percentage figure which, commencing with 1923, does not vary to any great amount from 60 per cent. There is no observable tendency in this curve to drop off, and it may be concluded that stokers are holding their own in the available market of power boilers.

It may also be added that the best information that can be secured, which, however, is not accurate enough to show as a curve, indicates something like 20 per cent of the horsepower of all water-tube boilers are being fired by the pulverized-fuel method. This supplementary market for mechanical firing is doubtless largely in the field of exceptionally large units.

The final residue of about 20 per cent of this boiler-firing market is probably being sold for the methods of gas and oil firing, and for hand firing. It is very interesting to note that stokers are maintaining their popularity as the major method for firing steam-power boilers.

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Personnel Problems in Management*

By Earl B. Morgan[1]

The personnel problem in management is much too large a subject to try to include in a compact formula or to cover in a brief paper such as this. To make such an attempt would manifest a total lack of knowledge of the subject. It deals with the human factor, the biggest variable that it is possible to introduce into the management problem. So all I can hope to do is to make some observations on the fundamentals which have developed from experience.

It seems to me that we can accept without argument the theory of human variation; that no two human beings are alike; and if we do, it naturally follows that there is no formula for a personnel program to fit all cases. Each case must be handled in accordance with the conditions existing in the particular organization, and no expert that I have ever met has any mystic bag of tricks for handling the situation. Nine of the ten things that he can do for an organization can actually be accomplished by that very organization itself if it will only set itself to it; but, by and large, that's the difficulty, and such problems are generally allowed to drift unless they are made the specific responsibility of some particular person.

I believe that there are a few fundamentals which must be recognized in framing a personnel policy for any organization irrespective of the kind of business, whether it be large or small.

Selecting the Personnel

First of these is the matter of selecting the personnel.

I have always been an ardent advocate of developing and maintaining at maximum efficiency methods of selection. It is the starting point and the foundation. It is a matter of vital concern to any organization, because in the final analysis its success depends upon the people who compose it. The best of equipment, plant, finance and sales plans may be provided, working conditions may be good and wages adequate, but all these and many other similar good and necessary provisions are of little avail unless the human equipment is the proper quality and quantity and operating with good morale. The only thing an organization has, aside from patents which a competitor cannot duplicate on short order with money is its personnel. I have been through several strikes and I hope that I shall never have to go through another, but these experiences left no doubt in my mind that machinery, material, money and methods are worthless monuments without men.

We know little if anything today about how to select men; but out of all the experimenting and intensive thought being given to the subject, we are gradually building up and developing more and more knowledge, and ten years hence the methods we are using today will probably seem crude. So in the absence of any 100 per cent method, the only thing we can do is to continue to give the matter intensive thought and study.

Let me here make a plea for more thoroughness in the matter of selection than we seem to be giving it in general practice.

The yearly wage of a $3,000 man is exactly the same amount as the annual wage of $50,000 of capital at 6 per cent; so if you think of every man you employ in terms of the capital which his wage can command, there should be no necessity to urge the use of all the care and thoroughness possible in selecting the personnel.

Selection Cannot Be Handled by Forms and Formulae

The matter of selection is not one to be handled by forms and formulae. It is not a problem of mechanics but of humanics, if I may coin the word. My experience makes it difficult to believe that any system will ever be devised for selecting the right employee every time. As a matter of fact, anyone who claims that he has developed such a method automatically classifies himself as a faker. Each case must be handled individually; each case presents a new problem in personal characteristics and job requirements, and it is here that the skill of the executive manifests itself by the quickness with which he sizes up conditions and adopts a plan to suit them.

The employee should be recruited from the best class of people in the community. He should be enthusiastically interested in becoming connected with the organization because he has a firm belief based on favorable public opinion that it is the best place to work. Everything should be done that is practicable to determine, both by objective and subjective methods, whether he has qualifications which can be applied so that he will be making the best investment of his services in his own personal interest. This condition must be satisfied to make him a good investment for the employer. Furthermore, the employee should be so placed that he will like his work so well that he plays it. He will be in full accord with the policies of his employer; in other words, his morale or attitude towards the job will be good.

An employee's qualifications should not only be weighed with respect to the requirements of the present opening, but also the possibilities of his measuring up to increasing responsibilities in the future. Every opening should be considered as an opportunity to develop an employee for a higher-up position.

This is so important, in my mind, that when I was with a corporation I always tried to constantly keep before me the questions: Have we the human material on hand and in course of development which will measure up to the requirements of the business

* Typothetae Bulletin.
[1] Consulting Engineer, Philadelphia.

five or ten years hence, and have we the executives in the making that we will need then?

Cannot Be Bought on the Outside

I am one of those who believe that large business organizations are coming to realize that the training and experience which comes out of growing up in the particular business is more valuable than any experience which can be bought on the outside.

Modern management methods demand that positions shall not be filled on a "hand-to-mouth" basis, but that there should be maintained at all times, in advance, information as to the current requirements for people and a detailed knowledge regarding likely candidates for all positions which may develop. All of which means that the personnel requirements should be budgeted in advance and a "waiting list" of capable and qualified material maintained. Such a waiting list should include an inventory of the present force so that opportunity to advance a worthy employee is not overlooked. To wait until a vacancy occurs and then rush out and grab whatever is available at the moment results generally in obtaining round pegs for square holes—bad for employer, even worse for employee. The person who is willing to wait to get into your organization, who wants to be with you, is the type which can be developed into an employee of good morale.

There seems to be a constant search on the part of many for some form of test by which the right person can be selected for the job. I have no intention of becoming involved here in any discussion regarding tests, their uses and merits. The application of tests to employment procedure, whether they are psychological, trade, performance or other types, is in a very elementary stage of development at the best. There are undoubtedly many good points in some of the best that are now being used, and in a general way may be of assistance provided that they are used with discretion and only as an aid to selection but *not* as a sole basis for deciding whether or not the applicate is qualified.

No Substitute for Judgment and Experience

It seems to be a common fault of enthusiastic proponents of tests to think that they have something to substitute for judgment. Personal emotions, ideals, compatibility, morality, home conditions and many other variables are beyond the scope of accurate measurement, yet they have a very definite bearing on the fitness for the job. So, even allowing for reasonable progress in the future development of tests, it is hardly possible to conceive of a time coming that they can substitute anything else for judgment and experience in placing people in positions and making a close study of their success and failures.

For my part, I put my faith in the selection that is made by the man who has had extensive experience placing people in the particular job in question, who has studied carefully why some have failed and some have succeeded, and out of all this has crystallized a mental picture of an ideal type for the job against which he judges the qualifications of an applicant.

My formula is very simple: Obtain all the information that I can from all possible sources about the person, including the opinions of as many others as I can interest in the matter; then weigh this with all the data that I can obtain regarding the requirements of the position. The important thing, and perhaps the most valuable thing, I have learned is not to pass judgment until I have as much information and as many opinions as it is possible to get and to remember that even then mistakes are going to be made, but I don't believe there will be as many as if it were handled on snap judgment.

Getting information about the applicant brings in the problem of checking up references. The term "reference" is generally interpreted in a loose sense, and unfortunately there has not been formulated a definite code of procedure whereby the one seeking the reference knows what to ask for or what he may expect to receive, and the one answering the request is in a quandry as to how to handle it.

Should Consist Only of Statement of Facts

An employment reference should consist of nothing more than a statement of facts given upon request by a previous employer, and should be based on the employment record of the subject covering such items as period of service, occupation, wage, reason for leaving, rating on workmanship, attendance, and conduct. It may not include all these items, but it should to be complete if they are all a matter of record, except possibly the wage when it would be against the employer's interest to disclose it. It should not be expected, however, to include a forecast or prophesy as to how the subject's character and workmanship will fit a given set of requirements generally unknown to the informant. In the simplest form, it should merely be a rating of past performance.

Too many employers expect the informant to prophesy how the subject is going to fit into his requirements. This is unreasonable, for after all each employer must do his own judging of applicants as he is the only one who is qualified to weigh the qualifications of the applicant with the requirements of the position, and he should not expect previous employers to do it for him.

Shortcomings in one organization do not necessarily mean failure in another any more than success can be expected merely because the man was satisfactory to the previous employer, and just because a man fails does not necessarily mean that the good references which were obtained on him were off color.

Some people seem to jump at the conclusion that references are worthless. No doubt a great many are; nevertheless I believe in doing everything humanly possible within the scope of my resources to get as much information as possible, because I believe there is real useful information in the possession of previous employers and acquaintances. The proof of this is that I have it in my own files and am perfectly willing to give it to those who are entitled to it and know how to make the proper use of it. I have never been very much worried about whether references are worth while or not. My problem is to get the information efficiently and then to be able to weigh and use it properly. This means that just as much careful study and thought must be given to analyze the source of the reference as to getting it.

I am fully aware that I am bound to experience many unsatisfactory results such as employers who keep no record, concerns out of business, biased references on a man's ability and character owing to personal disagreement, which always opens the question of who was to blame, and many other similar difficulties; but notwithstanding all this, I am going to get much useful information and will at least know more about the applicant than if I had not checked up on the references.

I am not kidding myself that I can find Mr. 100 per cent to fill a job. What I am after is, to know about the man's shortcomings and weaknesses as well as his strength, if I can possibly find all these things out, because I shall then be better prepared to handle him and know what to expect of him and what not to expect.

My conception of scientific placement is that an attempt is made to thoroughly analyze an applicant's qualifications and then place him in a job where his strong points will have maximum direct application and his weak points the minimum exposure under best handling.

Consider Qualities of Applicant

I am afraid I have been offering no help to those of you who expect me to tell you how to select employees. The more experience I have with the problem, the less I think I know about handling it. I do think I can help you somewhat by urging you to give as much care and thought as possible to the qualities of the applicant in relation to the requirements for the job and the social relations involved. Then follow up closely the progress

of the person who is selected and see that a change is promptly made at the first signs of weakness which can not be corrected.

There is no question but that the losses due to poor selection are tremendous, but, big as they are, I am willing to venture the opinion that they suffer little in comparison with the losses due to allowing misfits to stay on the job too long after it is obvious that nothing but failure can be expected. Such procedure simply pyramids the loss.

It seems to be difficult to convince many executives, particularly the minor ones, that no system has been or probably ever will be devised which will provide them with custom built employees to fit their jobs perfectly and that the best that can be hoped for is material qualified for development and that theirs is the responsibility for such development. As a general rule, an executive will get out of a properly selected employee just about what he puts into him in the way of training and development.

I once told an executive who was constantly complaining of his personnel that if his employees were all 100 per cent the company would not need him, because the employees would manage themselves.

Terms and Conditions of Employment

Let us leave this matter of selection; we could discuss it profitably without end. If I have dwelt on it too long, it is only because I look upon it as the very heart of the personnel administration problem.

Next I should like to discuss terms and conditions of employment, which is the second of the fundamentals to which I have previously referred.

The first factor is wages—the most important factor of all in its influence on the morale or attitude of the worker toward the job. Wages alone can not insure sound relations, but they must be right.

There is only one sound wage policy and that is to buy production, and buy it with the same business acumen that would be applied to the purchase of supplies and equipment. An employee should be looked upon as an investment, and not a payroll expense.

If management works along this fundamental principle of buying production, it does not approach the employing of a new man with the viewpoint of seeing how cheap he can be hired, but rather with the idea of attempting to get the best quality and quantity production. Good management does not buy buildings and machines or equipment on purely a price basis. It weighs the respective merits of one piece of machinery at a cheap quotation with those of another at a higher price and is guided in its decision by how it will produce, and what is the relative unit production cost.

This focuses our attention for a moment on the all-important principle that high wages coupled with good management result in low unit production costs.

The wage is not the whole factor influencing unit production costs. Material, overhead, selling—all enter into the determination of profit, and rarely is labor the largest of these factors. It is not how much or how little you pay in wages, but how much and what quality production you get for your payroll outlay that counts.

It would seem desirable to have the employee trying to produce up to the wage rather than the wage trying to catch up with the employee. I often wish it were possible to say to a new employee regarding a starting wage, "write your own ticket. If it is too high, you won't be able to deliver up to the requirements, and if it is too low we will have to adjust it quickly to your production or lose you."

Quality and Quantity Vary

But having a fixed flat wage scale in accordance with these theories is not enough by any means, as quality and quantity vary in human productivity just as they vary in raw material, and the price should be graded accordingly. All of which should seem sufficient reason in itself for financial incentives, but there is still a more important factor, the will and desire of the worker to produce. This can only be favorably influenced by offering an opportunity to earn more when he produces more.

When quality and quantity of workmanship improve, recognition should not be left to chance. Promotions should be freed as much as possible from the element of personal whim and other human traits. This is difficult, but where production can be measured fairly definitely then it is possible to make a promotion plan automatic upon attaining certain standards of production.

Recognition should not necessarily be limited to salary increases. Frequently awarding more responsibility gives the employee a stimulus; however, if he comes through with the responsibility, give him the money to which he is entitled.

Increases in value of service should be recognized in advance; and it should not be necessary for employees who are eligible to have to request an increase before they get it. A dollar given before an employee requests it will buy what two dollars will not later on.

It is surprising how few organizations appreciate that there should be a standard classification of wages. Where this has been overlooked, you will generally find inequalities between what is paid in one department and what in another.

There is an intimate relation between physical environment and productivity, and this principle dictates that every provision should be made for the comfort and safety of the employee while in the course of his employment.

Consider Physical Condition, Also Personal Contact

But we can not stop here without thinking of the physical condition of our human organization. We must give consideration to the health of the personnel, whether it be handled by a part-time consulting physician or a full-time medical department depends upon the individual problem; but whatever the conditions are, the health of the workers must have a scientific study and treatment. Make the doctor the master mechanic for the human equipment to keep it in good running order. I see too many medical departments which are run simply as an examining bureau for applicants and a dispensary for treating injuries. This might be sufficient reason to justify their maintenance, but they are overlooking the big bet—that is, the health service work.

The third fundamental is the matter of treatment. This deals with the personal relationship between the employee, his associates and the manager. It involves the method of handling him from the time he has applied for employment, the way he is treated during the process of selection, how he is placed on the job, introduced to the surroundings, and so on during the tenure of employment.

Go back into the history of any successful organization and you will find that there was a fine morale built up by personal contacts, by the human voice and the human smile, by getting into the hearts and souls of the people the thought that they are a part of the business and proud of it. All sorts of relationships are possible where there is an assembly of human beings working together during the major portion of their waking hours, and the executive who does not appreciate that there is a direct relation between this morale and productivity fails to meet the first requirement of leadership.

Let me emphasize the influence of psychological factors in acquiring the personnel, on future morale. The first relation that an applicant has with the company is during the employing process. Here he forms the first impressions of his prospective employer, which are lasting and, in fact, hard to overcome even though subsequent developments show them to be unjustified.

With a new employee careful nursing is necessary during the whole process of selection, placement and training. This is emphasized by the turnover records of the average concern, which generally show the greatest turnover during the first two or three months of the worker's service. Foremen and minor executives

seem to be particularly prone to overlook this fact and neglect their responsibility with new employees.

Provisions should be made for giving instructions to the new employee, and these instructions can not be made too plain, because strange environment tends to confusion. Any misunderstanding regarding terms of employment will undermine the morale of the force. Opportunities for salary increases and promotion should be described with the utmost care and without any misrepresentation.

Inform the New Employee

Inform the new employee about the company, its business, its schemes of organization, its policies, its rules and regulations. In short, sell it to him and keep him sold. A new employee should be told what is expected of him and, in turn, what he may expect of his employer.

The morale of an employee is as much a matter of loyalty as anything else. To get loyalty, a manager must give loyalty; that is to say, he must support his associates and have their interests and advancement at heart. It seems to be sometimes difficult to impress minor executives with the fact that the bigger they develop their people, the more credit they will receive.

One thing every manager should appreciate is that pride in the job is a thing that doesn't come by itself. The manager must take the first step in developing it right at the beginning of employment by impressing the new employee with the importance of the company's business, its high standing, its reputation for honesty, fair dealing and high class of workmanship, and show the employee the important part he plays in maintaining these standards.

An employee's publication provides an excellent means for helping to build up and sustain pride in business. It doesn't have to be the last word of the printer's art, but of course it helps to have an attractive make-up where it can be afforded; it is what is put in it that is informative about the business that really counts, and it should reach the home folks. I am a great believer in the home influence as an aid to maintaining a good working force, and especially does it count with the younger element.

The modern executive must be in a way a sort of public relations expert or at least have a fair understanding of the principles involved, because favorable public opinion of an institution as a good place to work is a decided asset in building and maintaining a personnel of good morale. The opinions of others regarding a job has its weight in the employee's own estimate of it because it is human nature to treasure a thing that is wanted by others and hard to get.

Breeds Opportunity for Misunderstanding

Although I would not advocate it, a management which treats its employees right can offset many errors of omission and commission in handling the human problem. I have seen concerns with a weak wage policy maintain a loyal force of employees simply because they treated them like human beings. Big business, with the development of large organizations, has tended to take the employee of the rank and file further and further away from the big boss. This lack of contact breeds an excellent opportunity for misunderstanding. Sometimes a superintendent or manager will feel that he is too busy with more important matters to give the necessary time to close personal contact with his employees, and he is either inclined to neglect it entirely or delegate it to some one of his subordinates. It is a matter which can neither be neglected nor delegated; it is as important as almost anything in the manager's line of duties, and he is the only one who can do it.

It cannot be handled as a mail order business. The personal word and pat on the back will always have a premium over the letter of commendation. I once had a man tell me how hurt he was to receive a cold formal letter of appreciation in recognition of some good work when what he really wanted was to have the big boss call him into the office and say it to him.

I do not believe that an employee representation plan, no matter how efficient as a piece of machinery, will ever prove to be a substitute for personal contact between the employee and his boss. I certainly have no intention of reflecting on the efficacy of employee representation plans; quite to the contrary, I believe if they are conceived in the proper spirit and properly administered, they unquestionably serve and will continue to serve a good purpose in many organizations. However, they have too often been applied with the wrong spirit as an expedient to meet a situation that would not have arisen had the management been on the job. After all, it is, with this as with all methods of personnel procedure, the spirit in back of it that counts more than the methods.

Waste Caused by Absence and Tardiness

Absence and tardiness cause far more waste in the productivity of a force than would be admitted off hand without a special study of the situation. Many executives are inclined to allow this matter to drift along and sap the efficiency of the force, and a great many managers are of the opinion that, when an employee is absent and not drawing pay, there is no loss. Such is not the case, because extra people must be carried on the payroll to insure a full working quota each day, not to mention the hold-up in production and adjustments that have to be made daily on account of absence. There is hardly a payroll list that could not be whittled if it were possible to get the ideal of 100 per cent attendance.

It is surprising what results can be obtained in reducing losses in this direction by fixing the responsibility, by putting pressure on the individual manager to expect promptness and regular attendance from their employees as a qualifying factor just as much as ability to do the work. I do not favor a bonus for good attendance. The manager who requires reasonable standards and gives the matter his regular individual attention will accomplish this.

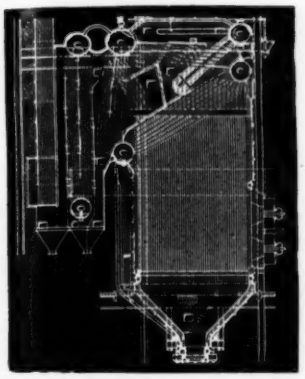
It has always impressed me as something more than a coincidence that when you find a manager with a poor promptness and attendance record you will find his labor turnover will be high, his accidents high, and there will also be other similar loose ends in his administration. I often say "Show me a manager's turnover and accident record and I will tell you what kind of an executive he is and incidentally risk a guess as to the quality of his superior."

There should be a definite vacation plan with the underlying principle that a vacation plan is designed to recuperate the worker physically to insure future productivity, not as a reward for past service.

Welfare work, for some reason or other, has fallen into disrepute because in the past some employers have tacked on a lot of unnecessary activities apparently because they have desired to have show stuff and to satisfy their paternalistic desires. It may be called welfare, service or whatever you want, but in any case whatever plan or activity you decide upon should be measured by the hard dollars and cents standard of good business to provide good and necessary working conditions which directly affect the morale of the force. It may be an entirely necessary activity for one company where the community does not afford adequate and satisfactory accommodations to take up the housing problem, but in another case, where the community does afford accommodations along this line, a move—just to have a nice village—would certainly be a worthless non-essential.

Financial Problems of Employees

Management that appreciates its responsibility to create good morale will give careful and personal attention to the financial problem of its employees. I don't mean that it is necessary to "butt in" or directly solicit it, but be ready and prepared to give advice or assistance, at least sympathy, in cases where the employee has encountered financial difficulties due to the sickness of himself or his family or some other similar emergency. Maximum production is not a product of the mind under financial strain.



BADENHAUSEN STEAM GENERATING UNITS

installed in some of the largest pulp and paper mills in the United States and Canada

MAXIMUM STEAM
AT
HIGHEST EFFICIENCY
WITH
LEAST CAPITAL INVESTMENT and OPERATING COSTS

Result:—Enormous savings in cost of pulp and paper produced.

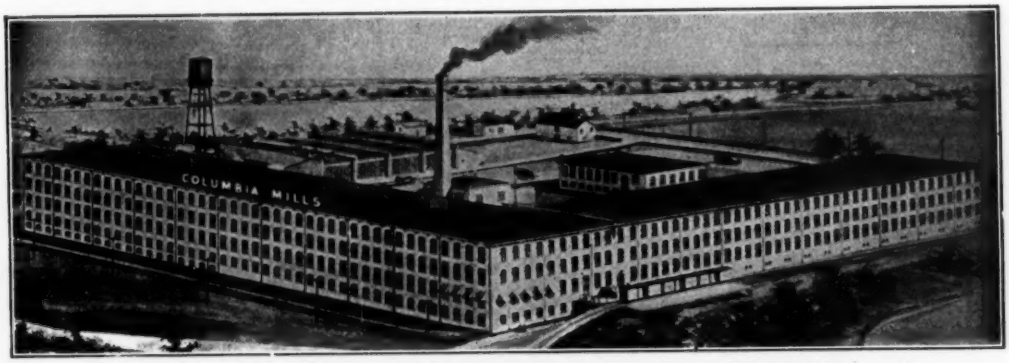
BADENHAUSEN CORPORATION
General Offices and Works
CORNWELLS HEIGHTS (PHILA.), PA.

COTTON DRYER FELTS

"Mt. Vernon" Standard Weave
Medium—Standard—Extra Heavy
Widths 36" to 164"

"Richland" Triplex Weave
Widths 68" to 210"

Felts within the above ranges made in lengths as required



Columbia, S. C., Plant of Mt. Vernon—Woodberry Mills, Inc., Baltimore—Where "Richland" Felts are made

Orders must be placed sufficiently in advance to insure satisfactory delivery

TURNER, HALSEY COMPANY

74 Leonard Street, New York

Sole Selling Agents for

MT. VERNON—WOODBERRY MILLS, Inc.

Union Screen Plate Company

Fitchburg, Mass., U. S. A. Lennoxville, P. Q., Canada

UNION BRONZE

SCREEN PLATES FOR FLAT SCREENS
6 SLOTS—5 SLOTS—4½ SLOTS—4 SLOTS—PER INCH

Old Plates Reclosed and Re-cut to Accurate Gauge
Rolled Phosphor Bronze and Copper Plates for Rotary Screens

Sole Manufacturers of the Union Witham Screen Plate Vat and Fastener

Then, too, thrift should be encouraged by a savings plan, building and loan or some other similar sort of machinery.

I have already touched a little on the subject of training. It hardly seems necessary to have to argue its case. There should be some definite plan, however, and the matter should not be left to take care of itself. In this, as with all personnel activities, I believe in putting the responsibility directly on the manager. He should do the training himself if it is at all possible, or have someone report to him and see that it is adequately carried out.

Every organization should make some provisions for length of service and be ready to assist to the best of its ability in case of superannuation. It is not necessary to have a formal pension plan, but it is essential for the company to stand ready to do its part and not discharge old employees in a helpless condition. Furthermore, good management will be prepared to the best of its ability and ready to take care of cases of disability due to sickness or accident by some sort of group insurance plan.

I have always been of the opinion that no concern can successfully cope with its personnel problems unless it makes each individual manager in the organization the personnel manager for his particular group of people, and helps him handle his problem by advising and assisting him in every way possible. It is not a question of how much the chief executive or owner of the business knows about handling the problem, but rather how much of this ability and knowledge is imparted to each individual manager in the organization.

News Print Production for November

Production of news print in Canada during November 1929 amounted to 252,046 tons and shipments of 253,219 tons, according to the News Print Service. Production in the United States was 113,729 tons and shipments 116,726 tons, making a total United States and Canadian news print production of 365,775 tons and shipments of 369,9444 tons. During November, 22,151 tons of news print were made in Newfoundland and 1,652 tons in Mexico, so that the total North American production for the month amounted to 389,578 tons.

The Canadian mills produced 322,130 tons more in the first eleven months of 1929 than in the first eleven months of 1928, which was an increase of 15 per cent. The United States output was 19,177 tons or 1 per cent less than for the first eleven months of 1928. Production in Newfoundland was 22,306 tons or 11 per cent more in the first eleven months of 1929 than in 1928 and in Mexico 2,146 tons more, making a total increase of 327,405 tons or 9 per cent over the same period in 1928.

During November, the Canadian mills operated at 91.2 per cent of rated capacity, United States mills at 77.6 per cent and Newfoundland mills at 108.1 per cent. Stock of news print paper at Canadian mills totalled 28,891 tons at the end of November and at United States mills 23,549 tons, making a combined total of 52,440 tons which was equivalent to 3.2 days, average production.

C. L. Winter to Locate in Montreal

The Claremont Paper Co., has just sent out the followng announcement:—"We are pleased to announce that C. L. Winter, who has been our Western Representative for a number of years, has been appointed sales manager of our parent company, the Brompton Pulp and Paper Company, Ltd., of East Angus, Quebec, Canada.

"Mr. Winter will take up his new duties about February 1, 1930, and will be located at Montreal.

"We will advise you later of our choice of a representative to succeed Mr. Winter. We appreciate the many courtesies which have been shown Mr. Winter and know you will be glad to extend the same consideration to his successor, and on our part we assure you of the same consideration and appreciation of your orders as in the past."

PROGRESS ON PUGET SOUND MILL

(*Continued from page 21*)

designed felt rifflers before entering the screens. Ample flat screens are provided to give careful screening of the brown stock before entering the bleachers.

Bleaching is a two-stage system with many details of new features and this installation is supplied completely by the Pulp Bleaching Corporation of New York. From the bleachers the stock is washed and in proper form pumped to another complete set of bleached stock rifflers, after which it passed over a second series of screens for screening of bleached stock before passing on to the dryers. The drying is done over two large Fourdrinier pulp drying machines, specially designed with pre-dryers so as to permit the passing of a thin sheet at relatively high speed over an ample number of drying cylinders so as to dry the stock under lowest temperature possible.

Provisions are made in the plant for a most up to date laboratory with the latest of equipment for complete chemical research and control.

The plant buildings are of the best type of concrete, steel and brick. With the excellent water and rail facilities for shipment, the company's own docks offering a unique combination for economy in handling pulp and chemicals. The company's dock will be provided with an overhead electric railway to transfer from ship side sulphur, limestone and lime direct to the storage bins of the various chemical units and the pulp storage is located on the company's dock with direct reach to chip side or rail.

The progress of construction has been very rapid. The 32-acre site provided for the plant was well prepared before construction started and it is now estimated that the plant will be completed and ready for operation not later than June 1, 1930. The buildings are so arranged that the doubling of the plant can be carried on without interference with the operation of the first unit, and the drier room for the second unit is now being built to be used as a pulp storage until the second unit is put under construction.

To Straighten Out Northwest Pulp Co. Affaires

PORTLAND, Ore., December 21, 1929.—The Northwest Pulp and Paper Company of Astoria, Oregon, which has had a projected plant under consideration for a year or more and which has been in financial difficulties, has just appointed Judge Burr E. Tatro and Chris Schuebel, of Oregon City, to co-operate with the directors or others interested for the construction of the mill, or if this is not possible, to recover $260,000 invested by stockholders. Judge Tatro is chairman of the committee and at a recent meeting was elected president of the stockholders. Mr. Schuebel was named secretary-treasurer.

Members of the stockholders' committee reported that over $260,000 had been secured by the Northwest Pulp and Paper Company through the sale of stock, this amount being spent and the mill not yet built. Recently it was said that the directors were preparing to organize a new company and proceed with the mill and that the stockholders would be protected.

American Writing Promotions

Three promotions in the personnel of the American Writing Paper Company, Inc., have been anonunced by President S. L. Willson as the result of the meeting of the board of directors at New York recently. The promotions are in line with the policy inaugurated when President Willson assumed the reins of the company, of promoting on merit from within the organization.

Russell L. Madden, general sales manager of the company for the past two years, was appointed vice-president, in charge of sales; Rufus D. Ewing, for the past year assistant general sales manager, succeeds to the position left by Mr. Madden and Roland B. McDougall, formerly manager of the announcement and papetrie division of the sales department succeeds to the post of assistant general sales manager.

Pulp Mill Knives for
Chippers
Barkers
Hogs
Shredders

Paper Mill Knives for
Washers
Beaters
Refiners
Jordans
Rotary Sheet Cutters
Trimmers
Flat Bed Cutters

Bolton Quality
BRONZE JORDAN KNIVES
Cut replacements—no erosion or sluffing—no discolorization
$1500 a year saved by one mill using them. Knives of Bolton Bronze are tough, hard, stiff, maintain clean, sharp, square edges over their entire length. Wear longer, reduce replacements. Write for information.

"It's the KNIVES that do the work"

John W. Bolton and Sons, Inc.
Lawrence, Massachusetts.
BOLTON QUALITY
Specialists in pulp and Paper Mill Knives For Twenty-Five Years

2865

PARIS BLACK IN FIBRE CONTAINERS
Still going strong . . have you ordered?

Buyers liked the idea of Paris Black in Fibre Containers right from the start. There has been no let down in the demand—in fact, it is increasing.

So this is a reminder to try it, in case you aren't already a satisfied user. By packing in fibre containers, the full strength and fine quality of Heller & Merz Paris Black reaches your plant unimpaired.

Prompt deliveries made from stocks in
NEW YORK
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Ask us to quote.

The HELLER & MERZ COMPANY
505 Hudson St. New York
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THE NEW FLATHER MACHINE
of Nashua, New Hampshire, for
Waxing - Oiling - Coating
and
Saturating
is guaranteed to give you the best finish, biggest production, least trouble and most satisfaction of any equipment on the market today.

Let us prove it to you.

Gibbs-Brower Co., Inc.
Sole Agents
261 Broadway, New York City

THE SIGN OF GOOD FELTS
USE OUR TOP FELTS on your Board Machines for FINISH and PRODUCTION.
MADE BY THE WATERBURY FELT CO.
AT SKANEATELES FALLS, N.Y.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING DECEMBER 28, 1929

SUMMARY

Cigarette paper	302 cs.
Wall paper	425 bls., 26 cs.
Paper hangings	22 bls., 5 cs.
News print	554 rolls
Printing paper	128 bls., 41 cs.
Filter paper	24 cs.
Drawing paper	5 cs.
Surface coated paper	18 cs.
Coated paper	5 cs.
Tracing paper	3 cs.
Tissue paper	173 cs.
Photo paper	4 cs.
Baryta coated paper	217 cs.
Bowl paper	22 bls.
Wrapping paper	14 cs.
Gallic paper	1 cs.
Writing paper	8 cs.
Transparent greaseproof paper	63 cs.
Decalcomania paper	39 cs.
Note paper	2 cs.
Stencil paper and ink	185 cs.
Colored paper	27 cs.
Raw hanging stock	348 rolls
Miscellaneous paper	421 cs.

CIGARETTE PAPER

Standard Products Corp., Rochambeau, Havre, 160 cs.

British American Tobacco Co., Carmania, London, 11 cs.

P. J. Schweitzer, Pres. Johnson, Marseilles, 131 cs.

WALL PAPER

Universal Car Loading Co., Deutschland, Hamburg, 1 cs.

Globe Shipping Co., Deutschland, Hamburg, 48 bls.

D. C. Andrews & Co., Deutschland, Hamburg, 6 bls.

Kensington Wallpaper Co., Deutschland, Hamburg, 86 bls.

J. E. Bernard & Co., Deutschland, Hamburg, 35 bls., 8 cs.

F. J. Emmerich, Deutschland, Hamburg, 74 bls., 7 cs.

Irving Trust Co., Thuringia, Hamburg, 8 cs.

F. J. Emmerich, Thuringia, Hamburg, 35 bls., 2 cs

Globe Shipping Co., Thuringia, Hamburg, 39 bls.

Draeger Shipping Co., Thuringia, Hamburg, 36 bls.

Kensington Wallpaper Co., Thuringia, Hamburg, 9 bls.

Importers Freight Service, Thuringia, Hamburg, 3 bls.

A. C. Dodman, Jr., Inc., Pres. Roosevelt, Bremen, 22 bls.

G. J. Hunken, Pres. Roosevelt, Bremen, 13 bls.

F. A. Binder, Pres. Roosevelt, Bremen, 19 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., Carmania, London, 22 bls., 5 cs.

NEWS PRINT

Perkins Goodwin & Co., Thuringia, Hamburg, 478 rolls.

Journal of Commerce, City of Fairbury, Kotka, 76 rolls.

PRINTING PAPER

Walker, Goulard, Plehn Co., Deutschland, Hamburg, 12 cs.

J. Henschel & Co., Deutschland. Hamburg, 7 cs.

J. J. Shore & Co., Columbus, Bremen, 10 cs.

J. I. Bernitz, Singapore Maru, Hamburg, 128 bls.

Dingelstedt & Co., Pres. Roosevelt, Bremen, 12 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., American Trader, London, 12 cs.

C. Schleicher & Schull Co., Thuringia, Hamburg, 12 cs.

DRAWING PAPER

J. Henschel & Co., Deutschland, Hamburg, 1 cs.

J. Henschel & Co., Thuringia, Hamburg, 4 cs.

SURFACE COATED PAPER

Globe Shipping Co., Deutschland, Hamburg, 3 cs.

——, Thuringia, Hamburg, 15 cs.

COATED PAPER

Pacific National Bank, Thuringia, Hamburg, 5 cs.

TRACING PAPER

Keuffel & Esser Co., Thuringia, Hamburg, 3 cs.

TISSUE PAPER

F. C. Strype, Pres. Johnson, Genoa, 7 cs.

J. E. Bernard & Co., Doric, Liverpool, 2 cs.

F. C. Strype, City of Fairbury, Helsingfors, 45 cs.

G. W. Sheldon & Co., American Trader, London, 3 cs.

Old Master Paper & Pulp Corp., Deutschland, Hamburg, 89 cs.

M. Snedeker Corp., Singapore Maru, Hamburg, 20 cs.

F. C. Strype, Singapore Maru, Hamburg, 2 cs.

Meadows, Wye & Co., Caronia, Liverpool, 2 cs.

W. J. Byrnes, Mauretania, Southampton, 3 cs.

PHOTO PAPER

J. H. Schroeder Banking Corp., Columbus, Bremen, 4 cs.

BARYTA COATED PAPER

Globe Shipping Co., Columbus, Bremen, 40 cs.

Globe Shipping Co., Pres. Roosevelt, Bremen, 177 cs.

BOWL PAPER

Hurley Johnson Corp., Caronia, Liverpool, 22 bls.

WRAPPING PAPER

C. Steiner, Thuringia, Hamburg, 14 cs.

GALLIC PAPER

Keuffel & Esser Co., Carmania, London, 1 cs.

WRITING PAPER

Guibout Freres, Mauretania, Southampton, 8 cs.

TRANSPARENT GREASEPROOF PAPER

Central Hanover Bank & Trust Co., Deutschland, Hamburg, 63 cs.

DECALCOMANIA PAPER

C. W. Sellers, Deutschland, Hamburg, 25 cs.

Phoenix Shipping Co., Deutschland, Hamburg, 3 cs.

C. W. Sellers, Thuringia, Hamburg, 4 cs.

C. W. Sellers, Columbus, Bremen, 2 cs.

L. A. Consmiller, Columbus, Bremen, 5 cs.

NOTE PAPER

H. Reeve Angel & Co., Inc., American Trader, London, 2 cs.

STENCIL PAPER AND INK

Arlac Dry Stencil Co., Deutschland, Hamburg, 68 cs.

Arlac Dry Stencil Co., Thuringia, Hamburg, 117 cs.

COLORED PAPER

——, Columbus, Bremen, 27 cs.

RAW HANGING STOCK

F. & R. Trading Corp., Pres. Roosevelt, Bremen, 348 rolls.

MISCELLANEOUS PAPER

American Express Co., Deutschland, Hamburg, 55 cs.

American Express Co., Thuringia, Hamburg, 124 cs.

Canson & Montgolfier, Rochambeau, Havre, 46 cs.

Japan Paper Co., Rochambeau, Havre, 28 cs.

Keller Dorian Paper Co., Rochambeau, Havre, 30 cs.

Standard Products Corp., Rochambeau, Havre, 118 cs.

Hensel, Bruckman & Lorbacher, Columbus, Bremen, 8 cs.

International Forwarding Co., Pres. Roosevelt, Bremen, 10 cs.

Pompeian Corp., Pres. Johnson, Marseilles, 2 cs.

RAGS, BAGGINGS, ETC.

Banco Com'l Italiane Trust Co., Exilona, Genoa, 253 bls. bagging.

Castle & Overton, Inc., Cabo Santa Maria, Santander, 135 bls. rags.

Fidelity Trust Co., Cabo Santa Maria, Bilbao, 22 bls. rags.

——, Cabo Santa Maria, Bilbao, 228 bls. rags.

A. W. Fenton, Inc., Tagliamento, Genoa, 195 bls. rags.

——, Tagliamento, Leghorn, 360 bls. rags.

Bankers Trust Co., Thuringia, Hamburg, 24 bls. rags.

Merchants National Bank, Singapore Maru, Hamburg, 41 bls. rags.

Robert Blank, Singapore Maru, Hamburg, 42 bls. rags.

International Germanic Trust Co., Singapore Maru, Hamburg, 83 bls. rags.

Chemical Bank & Trust Co., Singapore Maru, Hamburg, 113 bls. rags.

E. Mayer, Singapore Maru, Hamburg, 30 bls. rags.

Kidder Peabody Accep. Corp., Singapore Maru, Hamburg, 208 bls. rags.

Old Colony Trust Co., Singapore Maru, Hamburg, 18 bls. rags.

W. Steck & Co., Saco, Rotterdam, 60 bls. rags.

V. Galaup, Saco, Rotterdam, 9 bls. rags.

Chase National Bank, Saco, Rotterdam, 42 bls. rags.

Whaling Waste Products Co., Saco, Rotterdam, 162 bls. wrappers.

E. H. Silberman Co., Saco, Rotterdam, 40 bls. wipers.

E. J. Keller Co., Inc., Singapore Maru, ——, 60 bls. rags.

M. Snedeker Corp., Caronia, Liverpool, 79 bls. paper stock.

Baring Bros. & Co., Cameronia, Glasgow, 17 bls. paper stock.

R. F. Downing & Co., Mauretania, Southampton, 141 bls. rags.

Gallagher & Ascher, Carmania, London, 2 bls. rags.

Castle & Overton, Inc., Pres. Roosevelt, Bremen, 43 bls. rags.

Armstrong Corp. Co., Pres. Roosevelt, Bremen, 131 bls. rags.

C. Belsky, Pres. Roosevelt, Bremen, 34 bls. rags.

A. W. Fenton, Inc., Pres. Roosevelt, Bremen, 3 bls. rags.

Darmstadt, Scott & Courtney, Pres. Roosevelt, Bremen, 11 bls. rags.

E. Mayer, Pres. Roosevelt, Bremen, 4 bls. rags.

R. M. Gray, Inc., Nortonian, Manchester, 24 bls. paper stock.

R. F. Downing & Co., Winona County, Manchester, 19 bls. paper stock.

Irving Trust Co., Winona County, Manchester, 38 bls. bagging.

Castle & Overton, Inc., Winona County, Manchester, 108 bls. bagging.

Castle & Overton, Inc., Winona County, Manchester, 2 bls. rags.

CASEIN

Atterbury Bros., Inc., Western Prince, Buenos Aires, 250 bags.

WOOD PULP

E. M. Sergeant & Co., Lagaholm, Gothenburg, 827 bls. dry soda pulp.

Johanson, Wales & Sparre, Inc., Lagaholm, Gothenburg, 598 bls. dry soda pulp.

Price & Pierce, Ltd., Lagaholm, Gothenburg. 375 bls. wood pulp.

O. E. Kiaer, Lagaholm, Gothenburg, 900 bls. wood pulp.

E. M. Sergeant & Co., Lagaholm, Gothenburg, 258 bls. wood pulp.

Bulkley, Dunton & Co., Lagaholm, ——, 600 bls. wood pulp.

Chemical Bank & Trust Co., Stavangerfjord, Tofte, 600 bls. sulphite.

E. M. Sergeant & Co., Stavangerfjord, Oslo, 150 bls. wood pulp.

The Borregaard Co., Inc., Stavangerfjord, Sarpsborg, 336 bls. sulphate.

Atterbury Bros., Inc., Stavangerfjord, Oslo, 2,125 bls. wood pulp.

J. Andersen & Co., Tyrifjord, Sarpsborg, 1,200 bls. sulphite.

——, Sagauche, Kotka, 765 bls. sulphate, 130 tons.

Atterbury Bros., Inc., Pres. Roosevelt, Bremen, 125 bls. wood pulp, 25 tons.

OLD ROPE

Brown Bros. & Co., Cabo Santa Maria, Bilbao, 63 rolls.

(*Continued on page 64*)

LINDSAY SPIRAL WEAVE FOURDRINIER WIRES

prevent grooving of Seams on machines not equipped with oscillating Suction Boxes. This lengthens the life of wires and increases their production.

THE LINDSAY WIRE WEAVING CO.

14025 Aspinwall Ave.
CLEVELAND, OHIO

1864 **1930**

"EXCELSIOR" FELTS

for every grade of

PULP AND PAPER

We continue to maintain at the top the quality of Excelsior Felts, as we have done since we, as pioneers, made the first endless paper machine felts manufactured in America.

Seamless felts for fast running.
Satin Style felts for finish.
Special felts to meet every condition.
Send us your felt problems.

SOLD BY

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CAMDEN, MAINE

BULKLEY, DUNTON & COMPANY

75-77 Duane St., N. Y., and direct

Ticonderoga Machine Works

Ticonderoga, N. Y., U. S. A.

MANUFACTURERS OF

WARREN IMPROVED CALENDER DOCTORS

With Flexible Blades, Universal Adjustment and Control **(PATENTED)**

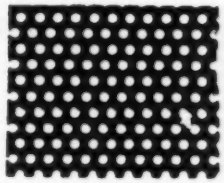
WARREN IMPROVED PATENT DOUBLE DRUM WINDERS

Patent BALL VALVE Hydrant
Stock Circulating Systems and
other Paper Mill Specialties

SEND FOR OUR BULLETIN

Perforated Metal Screens

For Pulp and Paper Mills

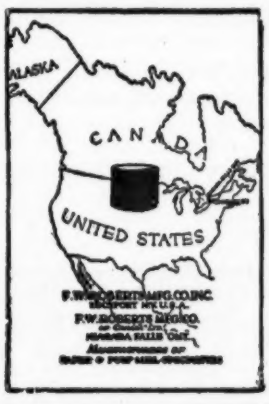


STEEL, COPPER, BRASS, BRONZE, MONEL METAL and other Alloys punched for Centrifugal and Rotary Screens, Pulp Washers, Drainer Bottoms, Filter Plates, etc.

".065" Round

CHARLES MUNDT & SONS
63-65 FAIRMONT AVE. JERSEY CITY, N. J.

B U R R S



B U R R S

Red
Brown
Yellow
} Oxides

Talc

Yellow Ochres,
Umbers, Agalite

C. K. Williams & Company
EASTON, PA.

Imports of Paper and Paper Stock

(*Continued from page 62*)

International Purchasing Co., Saco, Rotterdam, 34 coils.
Furness Withy Co., London Merchant, London, 121 coils.
Chemical National Bank, Pres. Roosevelt, Bremen, 74 coils.
R. M. Gray, Inc., Nortonian Manchester, 15 coils.
International Purchasing Co., Examiner, Genoa, 282 coils.

WOOD FLOUR

B. L. Soberski, Stavangerfjord, Frederickstad, 2,025 bags.
B. L. Soberski, Tyrifjord, Frederickstad, 750 bags.

WOOD PULP BOARDS

Lagerloef Trading Co., Deutschland, Hamburg, 334 bls., 48 tons.

NORFOLK IMPORTS

WEEK ENDING DECEMBER 28, 1929

E. Butterworth & Co., Inc., Anaconda, Antwerp, 183 bls. bagging.
Darmstadt, Scott & Courtney, Anaconda, Antwerp, 251 bls. bagging.
Irving Trust Co., Anaconda, Antwerp, 36 bls. rags.
British American Tobacco Co., Anaconda, Antwerp, 43 cs. printed cigarette wrappers.

PORTLAND, ME., IMPORTS

WEEK ENDING DECEMBER 28, 1929

Pagel, Horton & Co., Inc., City of Fairbury, Husum, 6,000 bls. sulphate, 1,000 tons.
Waterfalls Papermills, City of Fairbury, Gothenburg, 4,750 bls. wood pulp, 963 tons.
The Borregaard Co., Inc., City of Fairbury, Gothenburg, 2,750 bls. wood pulp, 557 tons.
Lagerloef Trading Co., City of Fairbury, Helsingfors, 1,421 bls. sulphite, 213 tons.
——. (City of Fairbury, Kotka, 612 bls. sulphite, 102 tons.

BOSTON IMPORTS

WEEK ENDING DECEMBER 28, 1929

The Borregaard Co., Inc., Lagaholm, Gothenburg, 1,750 bls. wood pulp.
Scandinavian Pulp Agency, Inc., Lagaholm, Gothenburg, 5,080 bls. kraft pulp.
Scandinavian Pulp Agency, Inc., Lagaholm, Gothenburg, 2,667 bls. sulphite.
Perkins Goodwin & Co., Lagaholm, Gothenburg, 1,270 bls. kraft pulp.
J. Andersen & Co., Lagaholm, Gothenburg, 1,325 bls. sulphite.
Parsons & Whittemore, Inc., Lagaholm, Gothenburg, 240 bls. sulphite.
Price & Pierce, Ltd., Lagaholm, Gothenburg, 500 bls. sulphite.
M. Gottesman & Co., Inc., Giulia, Sebenico, 4,000 bls. wood pulp.
J. Andersen & Co., Giulia, Trieste, 820 bls. wood pulp.
J. Andersen & Co., City of Fairbury, Gothenburg, 590 bls. sulphite, 119 tons.
Pagel, Horton & Co., Inc., City of Fairbury, Domsjo, 3,000 bls. sulphite, 500 tons.
——, City of Fairbury, Kotka, 2,032 bls. sulphate, 406 tons.
——, City of Fairbury, Kotka, 3,088 bls. sulphite, 516 tons.
Lagerloef Trading Co., City of Fairbury, Helsingfors, 801 bls. sulphite, 130 tons.
Atterbury Bros., Inc., Satartia, Buenos Aires, 667 bags casein.
Phila. National Bank, Easterner, Bristol, 152 bls. paper stock.
E. Butterworth & Co., Inc., Easterner, Bristol, 111 bls. paper stock.
Baring Bros. & Co., Nortonian, Manchester, 64 bls. new cuttings.
Brown Bros. & Co., Nortonian, Liverpool, 150 coils old rope.

BALTIMORE IMPORTS

WEEK ENDING DECEMBER 28, 1929

Lagerloef Trading Co., Sagauche, Helsingfors, 1,905 bls. sulphite, 323 tons.
Pagel, Horton & Co., Inc., Sagauche, Hornefors, 4,500 bls. sulphite, 750 tons.
Pagel, Horton & Co., Inc., Sagauche, Husum, 150 bls. sulphite, 25 tons.
Perkins Goodwin & Co., Sagauche, Obbola, 7,350 bls. sulphate, 1,050 tons.
Pagel, Horton & Co., Inc., Sagauche, Husum, 9,000 bls. sulphate, 1,500 tons.
True & McClelland, Easterner, Cardiff, 27 bls. rags.
Bank of N. Y. & Trust Co., Easterner, Cardiff, 232 bls. rags.
Congoleum Nairn Co., Examiner, Genoa, 215 bls. rags.
Congoleum Nairn Co., Examiner, Marseilles, 40 bls. rags.
Congoleum Nairn Co., Anaconda, Antwerp, 255 bls. rags.

PHILADELPHIA IMPORTS

WEEK ENDING DECEMBER 28, 1929

M. Gottesman & Co., Inc., Lagaholm, Gothenburg, 1,013 bls. wood pulp.
J. Andersen & Co., Lagaholm, Gothenburg, 750 bls. sulphite.
Perkins, Goodwin & Co., Lagaholm, Gothenburg, 236 bls. kraft pulp.
Parsons & Whittemore, Inc., Lagaholm, Gothenburg, 1,000 bls. wood pulp.
Parsons & Whittemore, Inc., Lagaholm, Gothenburg, 150 bls. sulphite.
Quaker City Paper Co., Lagaholm, Gothenburg, 89 bls. paper.
Atlantic Paper Co., Lagaholm, Gothenburg, 1 ble. paper.
Whiting & Patterson Co., Inc., Lagaholm, Gothenburg, 15 bls. paper.
Wolf Bros., Lagaholm, Gothenburg, 122 rolls paper.
Paper Manfg. Co., Lagaholm, Gothenburg, 1,021 rolls, 52 bls. paper.
Bank of New York, Tyrifjord, Halden, 120 bls. sulphite.
E. M. Sergeant & Co., Tyrifjord, Oslo, 150 bls. wood pulp.
National City Bank, Tyrifjord, Oslo, 600 bls. sulphite.
Chemical Bank & Trust Co., Tyrifjord, Tofte, 2,700 bls. sulphite.
Atterbury & McKelvey, Tyrifjord, Tofte, 1,800 bls. sulphite.
J. Anderson & Co., Tyrifjord, Greaker, 450 bls. sulphite.
Perkins Goodwin & Co., Sagauche, Obbola, 7,000 bls. sulphate, 1,000 tons.
V. Galaup, Examiner, Bari, 199 bls. rags.
Congoleum Nairn Co., Examiner, Bari, 69 bls. rags.
Guaranty Trust Co., Examiner, Leghorn, 411 bls. rags.
Congoleum Nairn Co., Examiner, Genoa, 65 bls. rags.
Robert Blank, Examiner, Marseilles, 44 bls. rags.
True & McClelland, Examiner, Marseilles, 356 bls. rags.
H. G. Lichtenstein, Examiner, Marseilles, 282 bls. rags.
E. J. Keller Co., Inc., Exton, ——, 100 bls. rags.
E. J. Keller Co., Inc., Noorderdyk, ——, 140 bls. rags.
E. J. Keller Co., Inc., Crefeld, ——, 56 bls. rags.
E. J. Keller Co., Inc., Rheinland, ——, 50 bls. rags.
E. J. Keller Co., Inc., Cabo Santa Maria, ——, 88 bls. rags.
E. J. Keller Co., Inc., Californie, ——, 163 bls. rags.

Oswegatchie to Retain Properties

[FROM OUR REGULAR CORRESPONDENT]

OGDENSBURG, N. Y., December 28, 1929.—The Oswegatchie Paper Company will not dispose of its paper mill at Natural Dam and the wood pulp mill at Emeryville as had been previously announced. Notice of the sale had been scheduled for early in March by commissioners engaged in a project for improvement of the Oswegatchie River and the hydraulic power situated on it. The sale was ordered for the non-payment of water power assessments over a period of many years. These assessments have now been paid by the paper company and the mill is now free to resume operations.

Fire Does Slight Damage at Iroquois Mill

[FROM OUR REGULAR CORRESPONDENT]

THOMSON, N. Y., December 21, 1929.—Considerable damage was done to the boiler room of the Iroquois Pulp and Paper Company by fire starting from a conveyor which removes ashes from the boiler. The blaze was confined to that department by the intervention of employees who brought the sprinkler system at the plant into play. The Schuylerville fire department was also called out and after a hard fight the blaze was finally extinguished. The damage was placed at about $1,000 covered by insurance.

Standard Paper Co. Holds Convention

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., December 30, 1929. Executives, branch managers, salesmen and district managers of the Standard Paper Company here attended the annual sales convention of the company Saturday in this city. Business sessions were held at the offices of the company. The annual banquet was held at the Claypool Hotel. Representatives of the company from Kansas, Tennessee, Ohio, Indiana, Illinois and Kentucky attended.

Middle States Wrapping Men Elect Officers

CHICAGO, ILL., December 31, 1929.—The new officers of the Middle States Wrapping Paper Association are as follows:

President, Leo S. Altholtz, Inlander Steindler Paper Company, Chicago; vice president, John Daily, Pilcher-Hamilton-Daily Company, Chicago; secretary-treasurer, Jas. S. Danehy, Schwarz Paper Company, Chicago.

P. H. Glatfelter Co. Gives Christmas Presents

SPRING GROVE, Pa., December 26, 1929.—Following a custom of fifty years standing, the P. H. Glatfelter Company distributed Christmas presents in the form of cash to all their employees.

The mills, which have been operating on a full six day and night schedule, were shut down on Christmas Day only.

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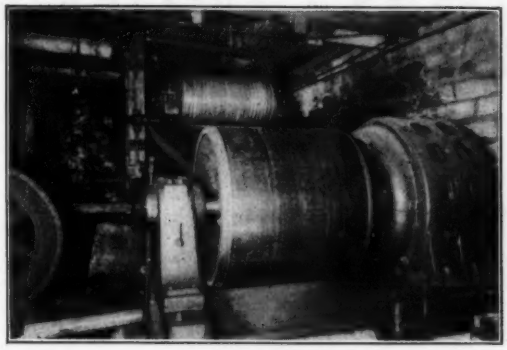

LITTLE STRETCH OR SLIP

BUT little of this 78-foot, 40-inch wide belt shows in our picture. It runs a line of beaters, Jordans, agitators and a stock pump on the floor above. It has been running nearly six years, and is in excellent condition.

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Acid Resisting Bronze

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WAUSAU, WIS.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Tuesday, December 31, 1929.

Increased activity is confidently anticipated in the local paper market now that the holidays are practically ended. While trading has been comparatively light during the past two weeks, the demand was quite up to the average for the period. Sales forces of the leading paper houses are preparing a strenuous campaign for business and the outlook generally is promising. Prices are holding to schedule, in most instances.

Conditions in the news print market are unchanged and the price situation has not yet been solved to every one's satisfaction. Statistics gathered by the News Print Service Bureau show that production at the North American mills was maintained at 85 per cent of rated capacity during the week ended December 21. Shipments proceeded at approximately 83 per cent of rating. Stocks at the mills are below normal.

Production of paper board has been curtailed during the past two weeks and demand for the various grades has declined slightly. The price situation is still unsatisfactory. The fine paper market is exhibiting a strong undertone with prices holding to previously quoted levels. Business in the coarse paper market has improved somewhat of late and wrapping paper has been moving into consumption in heavy volume.

Mechanical Pulp

The ground wood market was moderately active during the past week. The contract movement has been well up to average of late. Offerings of both domestic and imported mechanical pulp are limited, due to curtailment of production both at home and abroad, and prices continue steady to firm.

Chemical Pulp

While trading in the local chemical pulp market has quieted down, due to seasonal causes, the industry is in a sound position. No radical price changes have been recorded. Imported bleached sulphite is now offered at from $3.40 to $4.25, on dock, Atlantic ports, and easy bleaching is selling at from $2.90 to $3.15. Quotations on other grades are unaltered.

Old Rope and Bagging

Demand for old rope was mostly along routine lines. Domestic and imported manila rope moved in fair volume. Mixed strings continue steady. Prices of the various grades of old rope are holding to former levels. The bagging market was rather spotty. Both scrap and gunny were in moderate request. Roofing bagging was quiet. No price changes were recorded.

Rags

With the paper mills curtailing production, due to the annual overhauling of machinery and the taking of inventories, the domestic rag market was rather lifeless. Cotton cuttings, however, were fairly active. Prices remain unchanged, at former levels. Demand for imported rags was light, with prices unaltered.

Waste Paper

The paper stock market continues to display an irregular undertone. Mill demand for the lower grades of waste paper is light. Strictly over-issue news is now offered at from 60 cents to 65 cents but the quotations on other grades are practically unchanged. The better grades of paper stock continue in good demand with prices steady to firm.

Twine

Seasonal conditions prevail in the local twine market and the demand for the various grades has quieted down considerably. While some slight price revisions are anticipated in the near future, in some quarters, no radical changes are looked for. Taking everything into consideration the outlook for the twine industry for the forthcoming year is encouraging.

Slow Demand in Indianapolis

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., December 30, 1929.—The paper trade here virtually is stagnant. Demand since a week before Christmas has sunk to immediate requirements and likely will remain so until after the first of the year. Some contract orders are reported, but they are few and far between and the local jobbers believe orders of this nature will fall below those usual at this season. And this condition prevails in spite of the fact that prices are fairly well stabilized. The general impression the consumer has, however, is that in view of conditions there will be some price concessions and he is acting accordingly.

Now that the holiday rush is over, demand for glassines has resumed the normal volume. This volume continues to increase, however, from month to month as more and more uses are being found for these grades. It is doubtful if there ever have been as many articles for Christmas consumption wrapped in glassines as this year. The cigar manufacturers in this state continue to increase the use. The same is true of the candy manufacturers.

Some inquiries now are being received concerning prices for roofing and building papers. From all present indications the demand for both this spring will be larger than it was a year ago. At least the inquiries are larger, though actual buying has not yet started.

Most of the newspapers still are printing large editions advertising clearance sales and other offerings usual at the close of a season. The paper owners are of the opinion now that there will be no great change in print paper prices until the middle of the summer at least and are buying only slightly ahead of their requirements.

News Print Machine Started at Upper Falls

TICONDEROGA, N. Y., December 28, 1929.—The Uppers Falls plant of the International Paper Company will in the future manufacture newsprint exclusively after having turned out book for several months past. Operations at the plant were suspended about two weeks ago but one of the three machines was started early this week on news print and it is expected that the other two will be placed on the new product as soon as the necessary alterations can be made.

Victor DeWitt, for several years a machine tender at the Veldown plant of the International in South Glens Falls, has been transferred to the company's new mill in New Brunswick. He was recently tendered a farewell party by fellow employes and received a traveling bag and purse of gold as tokens of their esteem.

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Approved chemists to American Paper and Pulp Association and American Association of Woodpulp Importers.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Tuesday, December 31, 1929.

BLANC FIXE.—Seasonal conditions prevail in the blanc fixe market. The contract movement is well up to average. Prices remain unchanged. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¾ cents to 4½ cents a pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market is practically unchanged. Supplies are moving into consumption in fairly satisfactory volume for the time of year. Prices are holding to schedule. Bleaching powder is quoted at from $2.00 to $2.35 per hundred pounds, in large drums, at works.

CASEIN.—No further changes are reported in the casein market. Domestic casein is quoted at from 14½ cents to 15½ cents per pound. Argentine standard ground is selling at from 14½ cents to 15 cents, and finely ground at from 15 cents to 15½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. Contract shipments are moving in satisfactory volume. Prices remain unchanged. Solid caustic soda is still quoted at from $2.90 to $2.95, and the flake and the ground at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is in a sound position. The contract movement is seasonal. Prices are holding to previously quoted levels. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—Demand for chlorine is persistent. Prices are holding to schedule. Chlorine is quoted at $2.75 per 100 pounds, in tanks, or multi-unit cars, at works, for lots of 250 pounds or over. For less than that quantity, the quotation is still $2.85 per 100 pounds, at works.

ROSIN.—The rosin market fluctuated slightly during the week. The grades of gum rosin used in paper mills are quoted at from $8.15 to $8.25 per 280 pounds, in barrels, on dock. Wood rosin is selling at from $6.50 to $7.65 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—The salt cake market continues to exhibit a strong undertone. While demand from the mills is heavy, offerings are still scarce and prices are firm. Salt cake is quoted at from $22 to $25 per ton, while chrome salt cake is selling at from $20 to $21 per ton, in bulk, at works.

SODA ASH.—Contract renewals of soda ash are being booked in excellent volume for 1930 delivery. Contract shipments are going forward in normal volume for the time of year. Contract quotations on soda ash, in car lots, at works, are as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—The position of the starch market is practically unchanged. Production is being maintained in sufficient volume to take care of current requirements. Prices are steady. Special paper making starch is quoted at $3.82 per 100 pounds, in bags, and at $4.09 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Trading in the sulphate of alumina market was rather light, due mainly to the holiday lull. The contract movement, however, was normal. Prices remain unchanged. Commercial grades are quoted at from $1.40 to $1.55, and iron free at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—Most of the business transacted in the sulphur market was along routine lines. Sulphur is quoted at $18 per ton, at mine, for 1,000 tons, or over, on yearly contract, and at $20 per ton, for any smaller quantity over the same period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Conditions in the talc market are seasonal. Supplies are moving into consumption in fair volume. Prices are holding to schedule. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines, while imported talc is selling at from $18 to $20 per ton, in bags, ship side.

Market Quotations

Paper
(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@53.25
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
Book, Cased—		
S. & S. C.	6.00 @	7.50
M. F.	5.75 @	7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75 @	1.00
Anti-Tarnish	1.35 @	1.90
Colored	1.00 @	2.00
White No. 2	.75 @	.80
Kraft	1.00 @	1.10
Manila	.75 @	.80
Kraft—		
No. 1 Domestic	6.25 @	6.50
No. 2 Domestic	5.00 @	5.50
Southern	4.45 @	4.70
Imported	6.50 @	7.00
Manila—		
No. 1 Jute	9.00 @	9.25
No. 2 Jute	7.75 @	8.50
No. 1 Wood	4.75 @	5.25
No. 2 Wood	4.00 @	4.50
Butchers	3.75 @	4.25
Fibre Papers—		
No. 1 Fibre	5.00 @	5.50
No. 2 Fibre	4.75 @	5.25
Common Bogus	2.75 @	3.00
Screenings	3.00 @	3.25
Card Middles	4.00 @	5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

News, per ton—		
Rolls, contract	62.00 @	—
Rolls, spot	62.00 @	—
Sheets	67.00 @	—
Side Runs	47.00	@52.00
Boards—per ton—		
News	37.50	@40.00
Straw	52.50	@55.00
Chip	35.00	@37.50
Binders' Boards	65.00	@70.00
Wood Pulp	80.00	@85.00
65 Test Jute Liner	45.00	@47.50
85 Test Jute Liner	50.00	@55.00
Sgl. Mla. Ll. Chip	47.50	@50.00

Mechanical Pulp
(On Dock)

No. 1 Imported—		
Moist	30.00	@32.00
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@30.00
Screenings	15.00	@20.00

Chemical Pulp
(On Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.40 @	4.25
Easy Bleaching	2.90 @	3.15
No. 1 strong unbleached	2.75 @	3.00
Mitscherlich unbleached	2.80 @	3.25
No. 2 strong unbleached	2.40 @	2.60
No. 1 Kraft	2.35 @	2.50
No. 2 Kraft	2.30 @	2.40
Sulphate—		
Bleached	3.40 @	3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.20 @	4.75
Easy Bleaching Sulphite	2.65 @	3.00
News Sulphite	2.50 @	2.70
Mitscherlich	3.00 @	3.25
Kraft (Domestic)	2.10 @	3.30
Soda Bleached	3.10 @	3.25
Sulphate Screenings—		
Coarse	.75 @	.95
Refined	1.65 @	1.85

Domestic Rags
New Rags
(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	10.50	@11.00
New White, No. 2	8.00 @	8.50
Silesias No. 1	7.50 @	8.00
New Unbleached	11.00	@11.50
New Blue Prints	5.25 @	5.50
New Soft Blacks	5.25 @	5.75
Blue Overall	7.50 @	8.00
Washables	4.75 @	5.25
Fancy	5.75 @	6.25
Mixed Khaki Cuttings	4.75 @	5.25
Pink Corset Cuttings	8.00 @	8.50
O. D. Khaki Cuttings	5.15 @	5.75
Men's Corduroy	3.75 @	4.25
New Mixed Blacks	3.50 @	3.75

Old Rags

White, No. 1—		
Repacked	5.50 @	6.00
Miscellaneous	4.50 @	5.00
White, No. 2—		
Repacked	3.00 @	3.50
Miscellaneous	2.50 @	2.75
St. Soiled, White	2.00 @	2.15
Thirds and Blues—		
Repacked	2.25 @	2.50
Miscellaneous	1.75 @	2.00
Black Stockings	3.25 @	3.75
Roofing Rags—		
Cloth Strippings	1.70 @	1.80
No. 1	1.70 @	1.80
No. 2	1.55 @	1.65
No. 3	1.30 @	1.40
No. 4	1.25 @	1.35
No. 5A	.90 @	1.05

Foreign Rags
New Rags

New Dark Cuttings	2.50 @	3.00
New Mixed Cuttings	2.75 @	3.25
New Light Silesias	7.00 @	7.50
Light Flannelettes	7.50 @	8.00
Unbleached Cuttings	10.00	@11.00
New White Cuttings	10.00	@10.50
New Light Oxfords	7.00 @	7.50
New Light Prints	5.50 @	6.50

Old Rags

No. 1 White Linens	7.25 @	8.00
No. 2 White Linens	5.75 @	6.75
No. 3 White Linens	4.75 @	5.25
No. 4 White Linens	3.00 @	3.50
No. 1 White Cotton	5.50 @	6.50
No. 2 White Cotton	4.50 @	5.50
No. 3 White Cotton	3.00 @	4.00
No. 4 White Cotton	2.00 @	2.10
Extra Light Prints	2.75 @	3.25
Ord. Light Prints	2.25 @	2.50
Med. Light Prints	1.95 @	2.10
Dutch Blue Cottons	2.20 @	2.35
French Blue Linens	2.75 @	2.85
German Blue Linens	2.35 @	2.55
German Blue Cottons	2.10 @	2.20
Checks and Blues	1.85 @	2.00
Lindsay Garments	1.85 @	1.95
Dark Cottons	1.55 @	1.60
Old Shopperies	1.50 @	1.55
New Shopperies	1.50 @	1.55
French Blues	2.10 @	2.25

Old Rope and Bagging
(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.50 @	1.60
Domestic	1.60 @	1.70
Wool Tares, light	1.60 @	1.65
Wool Tares, Heavy	1.60 @	1.70
Bright Bagging	1.60 @	1.70
Small Mixed Rope	1.25 @	1.40
Manila Rope—		
Foreign	4.40 @	4.60
Domestic	4.75 @	5.00
New Burlap Cut	2.75 @	3.00
Hessian Jute Threads—		
Foreign	3.50 @	4.00
Domestic	3.25 @	3.50

Old Waste Papers
(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.00 @	3.25
Hard, white, No. 2	2.40 @	2.55
Soft, White, No. 1	2.40 @	2.55
White envelope cuttings	2.90 @	3.10
Flat Stock—		
Stitchless	1.45 @	1.55
Overissue Mag.	1.45 @	1.55
Solid Flat Book	1.40 @	1.50
Crumpled No. 1	1.00 @	1.10
Solid Book Ledger	2.00 @	2.10
Ledger Stock	1.40 @	1.50
New B. B. Chips	.45 @	.55
Manilas—		
New Env. Cut	2.40 @	2.60
New Cuttings	1.50 @	1.75
Extra No. 1 old	1.25 @	1.35
Print	.60 @	.65
Container	.40 @	.50
Bogus Wrapper	.60 @	.65
Old Kraft Machine Compressed bales	1.65 @	1.75
News—		
No. 1 White News	1.65 @	1.75
Strictly Overissue	.60 @	.65
Strictly Folded	.55 @	.60
No. 1 Mixed Paper	.25 @	.30
Common Paper	.15 @	.20

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Twines
(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine			
Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¼
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	4.25	@	4.50
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x20 Sheet	.07¼	@	.07½

(Delivered Central Territory)

News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	42.50
Solid News	47.50	@	—
Solid News	40.00	@	45.00
Manila Lined Chip	50.00	@	55.00
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.20	@	2.25
White Env. Cuttings	2.40	@	2.50
No. 1 Soft Shavings	2.00	@	2.10
No. 1 Mixed	.60	@	.70
No. 2 Mixed	.50	@	.60
Ledger & Writings	1.25	@	1.35
Solid Books	1.05	@	1.10
Blanks	1.40	@	1.50
Krafts	1.60	@	1.75
New Kraft Cuts	2.15	@	2.25
Manila Envelope Cuttings	1.75	@	1.80
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.70	@	.75
Folded News (oversize)	.65	@	.70
Old Newspapers—			
No. 1	.65	@	.70
No. 2	.55	@	.65
Mixed Papers—			
No. 1	.50	@	.60
Roofing Stocks—			

(F. o. b. Chicago, net cash)

No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.06	@	.40
Ledgers	.09	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.10	@	.20
Book, M. F.	.05½	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.09½	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.08	@	.09
Manila Sul., No. 1	.04	@	.05½
Manila No. 2	.03	@	.04
No. 2 Kraft	.06	@	.06½
No. 1 Kraft	.06½	@	.07
Common Bogus	.03½	@	.04

(Delivered Philadelphia)

News Print Rolls	62.00	@	—
Straw Board	52.50	@	70.00
News Board	37.50	@	40.00
Chip Board	35.00	@	47.50
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
Fancy	.05½	@	.06
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.80	@	2.90
No. 2 Soft White	1.80	@	1.90
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.85	@	1.90
Writing Paper	1.60	@	1.65
No. 1 Books, heavy	1.40	@	1.50
No. 2 Books, light	1.05	@	1.15
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.50
Common paper	.50	@	.55
No. 1 Mixed Paper	.60	@	.65
Straw Board, Chip	.60	@	.65
Binders Board, Chip	.60	@	.65
Overissue News	.80	@	.85
Old Newspaper	.50	@	.55

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
White, No. 2	2.00	@	2.25
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75
Repacked	.01¾	@	.02
No. 2	1.30	@	1.35
No. 3 (Roofing)	1.15	@	1.25
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.12½
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.06¾	@	.06½
No. 2 Kraft	.04½	@	.05½
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls .009	52.50		
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	50.00	@	—
Single White, Patent Coated Newsboard Bender	65.00	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00

(F. o. b. Mill)

Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.40	@	2.50
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.50	@	1.55
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	.90	@	1.00
White Blank News	1.50	@	1.60
Old Kraft	.165	@	1.85
Print Manila	.80	@	.90
No. 1 Mixed Paper	—	@	.35
Overissue News	.60	@	.70
Old Newspapers	.45	@	.50
Box Board, Chip	.45	@	.50

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.40	@	1.50
Manila Rope—			
Foreign	—	@	4.25
Domestic	—	@	4.50
Transmission Rope	—	@	3.00
Mixed Strings	1.00	@	—
Jute Wool Strings	1.00	@	1.05
Jute Carpet Threads	1.05	@	1.15
Scrap Burlaps	—	@	1.35
Scrap Sisal	1.80	@	2.00
Scrap Sisal for shredding	1.85	@	2.00
Wool Tares, heavy	1.60	@	—
New Burlap Cutting	1.90	@	2.00
Australian Wool Pouches	3.00	@	3.12½

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09½	@	.10
Silesias, No. 1	.06	@	.06¼
New Unbleached	.10	@	.10½
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04	@	.04¾
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	1.90
Black Stockings	—	@	4.00
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags
(F. o. b. Boston)

Dark Cottons	—	@	1.55
New No. 1 Shirt Cuttings	9.00	@	9.50
Dutch Blues	2.00	@	2.12½
Lace Curtains	4.75	@	5.00
New Checks & Blues	4.25	@	4.60
Old Fustians	1.90	@	2.00
Old Linsey Garments	1.80	@	1.85

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft M. F.	7.00	@	—
M. G.	7.00		—

(Delivered Toronto)

News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

Ground Wood	31.00	@	32.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	60.00	@	—
Sulphite, bleached	77.00	@	78.00
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.85	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09¾	@	.10
Fancy Shirt Cuttings	.06	@	.06¼

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Appleton
Felts and Jackets

PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-EIGHTH YEAR

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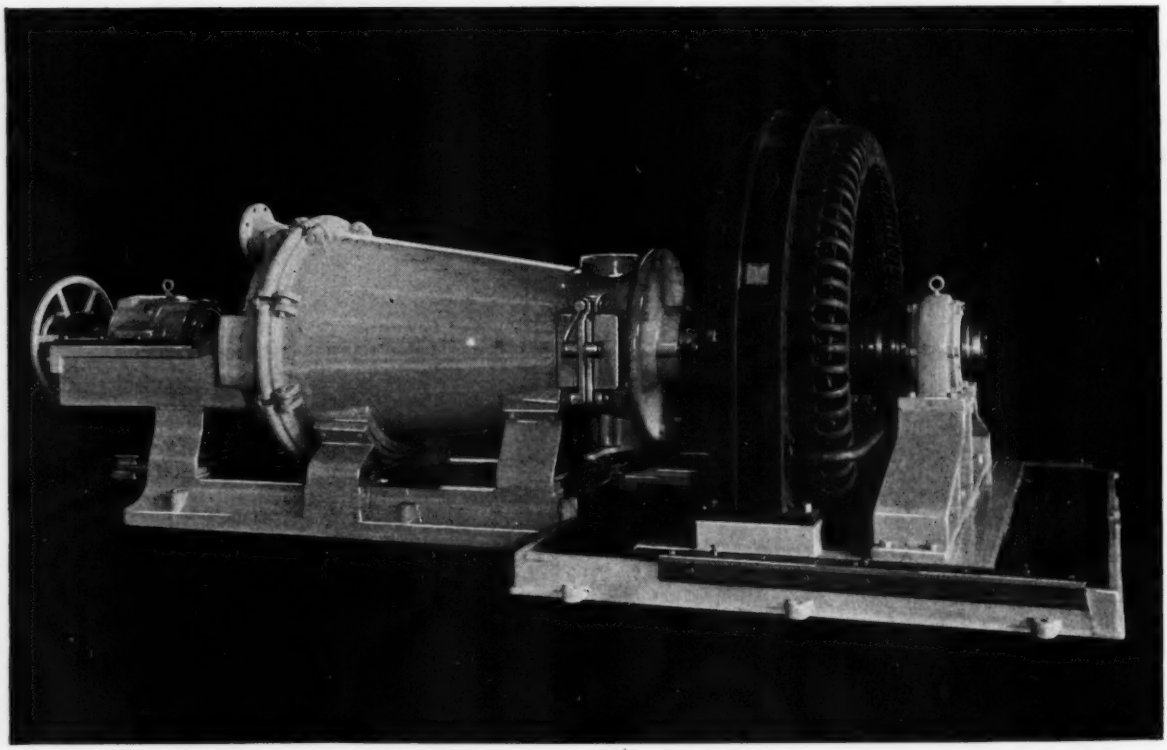
--MANY ADVANTAGES AND A MORE IMPROVED JORDAN PERFORMANCE

Patents Applied for



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